THE

AMERICAN GAS-LIGHT JOURNAL

DEVOTED TO

LIGHT, HEAT, WATER-SUPPLY, AND SEWERAGE.

Iron Buildings, Nos. 254 & 256 Canal Street, East, near Broadway, New York.

VOL. II.—No. 17. NEW-YORK, SATURDAY, SEPTEMBER 1, 1860. $3 PER ANNUM.

TO GAS-FITTERS & PLUMBERS.—L. Waefeler & Co., No. 94 Beekman-street, New York, have always on hand several hundred kegs WROUGHT-IRON GAS-PIPE HOOKS, of all sizes from ⅜ to 2 inches. They are made of best quality horse-shoe nail iron, and warranted not to break. Also, PLUMBERS' MATERIALS such as China Wash-Basins, Closet Basins, Pan-Closets, Bath Tubs, Boilers, Brass and Silve-plated Cocks, Brass and Iron Pumps, Hydraulic Rams, French Fountain Jets, &c., all at the very lowest prices.

BUTTS & KENDALL, (Formerly F. Butts & Co.,) Dealers in STERLING COAL, Cleveland, Ohio.—The attention of Gas Companies is called to the following letters as to the merits of the above Coal, being a few of the many we have received, and from which we are led to believe that there is no English or American Coal which combines all the qualities desired in a Gas Coal as perfectly as the Sterling :—

Office of the Manhattan Gas Light Co.,
New York, January 13, 1860.

MESSRS. BUTTS & KENDALL :—*Gentlemen* :—Yours 9th inst. is received. The "Sterling Coal" received from you during the past year worked very satisfactorily—averaging 9520 cubic feet of 15 candle Gas per ton of 2240 lbs, and 41 bushels of Coke, weighing 1465 lbs. We consider it among the best of American Gas Coals, for the quantity and quality of the Gas produced, and also for the excellent quality of its Coke. I am, Gentlemen, your obedient servant, CHARLES ROOME, Pres.

Office of the Rondout and Kingston
Gas Light Co, Rondout, *Jan* 4, 1860.

MESSRS BUTTS & KENDALL :—*Gentlemen* :—The 600 tons of Sterling Coal ordered from you in August, 1859, has now been in use over four months, to my entire satisfaction. Its average yield is 4, 40-100 feet, and a good strong light. The Coke produced equal in quality and quantity, to best English Coking Coals. It burns very freely with little clinker. In purification it is economical, using no more lime than New Pelton. It is superior to any American Coal I ever used. I shall be pleased to give you any further information at my office in New York.

WM. W. HAGUE, 522 Broadway.

The Cleveland Gas Light and Coke Co.,
Office, 195 *Superior-St., Cleveland, Dec.* 30, 1859.

MESSRS. BUTTS & KENDALL :—*Gentlemen* :—This Company has used between 3000 and 4000 tons of your "Sterling Coal," and are still using it with very satisfactory results. We find the average product of a ton of 2000 lbs. is about 8800 feet of Gas and about 37 bushels of Coke. The Gas is of good illuminating power and quite free from sulphur or other impurities, one bushel of lime purifying 9000 feet, and the Coke of very superior quality. The yield of Gas is about the same as from the Pittsburgh Coal, and the Coke better adapted to our use. Yours, truly, T DWIGHT KELLS, Sec.

Office of the Sandusky, O., Gas Co., *Jan.* 16, 1860

MESSRS. BUTTS & KENDALL:—*Gentlemen* :—This Company has used your Sterling Coal since July 3d, 1859, and are still continuing the use of it with satisfaction to the Company and consumers. The average product has been 8,629 feet of Gas per ton of 2,000 lbs, and 37 bushels of Coke of very superior quality. The Gas is as good as that obtained from Pittsburgh Coal. I consider it the best Coal ever used in our works. I am, gentlemen, yours respectfully, WM. HUDSON, Sup't & Sec'y.

We would also refer to Gas Companies in the following places :—New York City (Manhattan and New York Co's), Albany, Troy, West Troy, Rochester, Oswego, Rondout, Kingston, Albion, Brockport, Seneca Falls, Elmira and Lyons, in the State of New York ; Cleveland, Toledo, Sandusky, Norwalk and Oberlin, in Ohio ; Detroit, Ann Arbor, Grand Rapids and Kalamazoo, in Michigan ; Coburg, in Canada, and two Companies in Milwaukie, Wisconsin.

The extensive Mines of the Sterling Coal and Mining Company, in the western part of Pennsylvania (known as the Sterling Hills, and the highest in that part of the State), are wholly under our control, and the Coal is mined and sold only by us or our Agents. The average product of the Sterling Coal, per ton of 2,000 lbs., is 8,733 feet of 15½ candle Gas (4, 37-100 per lb.), and 37 bushels of Coke of very superior quality. Getting our Coal to this place by railroad, a supply can be had during the summer months (as well as at all other times), which is not the case with coals dependent upon high water for transportation, as are most or all other gas coals which are sent to the Lake ports for shipment. Our mining facilities are such, that we are prepared to ship extensively. For any further information address the undersigned, or M. BALLARD, Esq., Syracuse, N. Y., who is our Agent for that State.

BUTTS & KENDALL, Cleveland,

CORNELIUS & BAKER,

MANUFACTURERS OF

Lamps, Chandeliers, Gas-Fixtures, &c.,

MANUFACTORIES,

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STORE, 710 CHESTNUT STREET,

PHILADELPHIA.

JOHN HEARN & CO., Dealers and Miners in AMERICAN GAS-COALS, Erie, Penn., would call the attention of Gas Companies to the superior quality of our Coals. For the past ten years they have been used by a majority of the Gas Companies in the State of New York, west of Albany and Troy. And also by the Gas Companies in the cities and towns of the North-Western States, and, during the past year, by the East Troy Gas-Light Company, Albany Gas-Light Co., and Manhattan Gas-Light Co. of the city of New-York, —all of which heretofore used English Coals.

Owning our mines and a fleet of vessels on the Lakes, having no Railroad transportation, and only 70 miles of canal from this city, or 140 miles of canal and Lake from Buffalo to the coal fields, being 175 miles less of transportation for Coal to the Seaboard, than any Coal Depot on the Lakes and having an Agency in Buffalo for the transhipment of our Coals only, it is unnecessary to say that parties purchasing of us, will get their Coal at first hand, saving, thereby, commission to managers and 175 miles of extra railroad and lake transportation.

A working average of our Beaver Coal is 9,500 feet of 16 Candle Gas, and 40 bushels Coal to the ton of 2,240 lbs.

The Manhattan Gas-Light Co of New York having thoroughly tested the Gas Coals of Pennsylvania and Ohio, the following extract from a letter to us will speak for itself:

"MANHATTAN GAS-LIGHT COMPANY,
"New York, June 15th, 1859.

"MESSRS. JOHN HEARN & Co., Erie, Penn. :

"GENTLEMEN,—This Company has a contract with your firm for the delivery of five thousand tons of Gas Coal, half each Beaver and Mount Carbon, at $ —— per ton of 2,240 lbs.

"The cargo which has been received is satisfactory, and as we shall need 15 or 20 thousand tons more, to be delivered through the present summer, we beg you to advise us whether you desire to increase your contract. We have applications from various parties who desire to supply the Company, but shall be satisfied to get a larger quantity of your Coals, provided you can serve us on terms equally favorable with others.

"For the Gas Co.

"HENRY YOUNG."

We are prepared to contract for the delivery of our Coals in the City of New York, or the cities and towns on the Hudson River.

CANNEL AND ORREL GAS-Coal.—The Subscribers are constantly receiving direct, from the celebrated mines of WILLIAM H. BRANKER & CO., NEWCASTLE, ENG., COAL of the very first quality for gas purposes, which they will sell direct from ship or from yard at the lowest market price ; and we guarantee the coal to be equal if not superior to any other coal brought to this market.

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ANTHRACITE AND BITUMIN-ous Coal.—We are now prepared to contract with Dealers and Manufacturers, at wholesale only, for the choicest varities of Lehigh and Schuylkill Coals, Pure Locust Mountain direct from the miners' hands, George's Creek Coal from Hampshire Mines at Baltimore, and Midland Co.'s Mines at Alexandria, unexcelled for Blacksmiths', Locomotive and Manufacturing purposes. At Elizabethport, N. J., we always have a full supply of Lehigh, Spring Mountain, Hazleton and Council Ridge Coals.

LEWIS AUDENRIED & CO., 110 Broadway,
86 State street, Boston,
205 Walnut street, Philadelphia.

TO BUILDERS OF GAS WORKS.—A valuable Corporation Grant for a Gas-Works, in a flourishing City in the State of Ohio, for sale. For particulars apply to

B M. JOHNSON,
114 East 18th street, New-York City.

TO INVENTORS.—Patent Agency of the AMERICAN GAS-LIGHT JOURNAL.—The Proprietor of the AMERICAN GAS-LIGHT JOURNAL, is happy to announce that a

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INVENTORS' DEPOT & SALES Room for Patent Rights.—Parties desirous of placing with us valuable Patents, for the sale of Rights, on commission, will here find the Head-Quarters for Inventors and their Patents, as well as for parties seeking investments in articles of undoubted merit. The public are invited to call, or send for Circulars. New articles coming in daily. BUTLER, HOSFORD & CO.,
No. 30 Broadway, N. Y., Proprietors of the
Paragon Self-Generating Gas-Light.

TO GAS COMPANIES AND CON-tractors.—For Sale : Two sets Dry Lime Purifiers, 14 feet by 12 feet, 5 tiers of plates, 12 inch connections ; and One Set Purifiers, 10 feet by 5 feet, 5 tiers of plates, 8 inch connections. A Station Meter, (square case) 8 feet front, 8 feet deep, and 7 feet high ; register a 250,000 feet per diem. Also a quantity of Bench Castings, consisting of Sections of Hydraulic main, (D shaped pattern,) Stand, Bridge and Dip Pipes, together with a number of Composition-faced Slide Valves, various sizes, from 6 inches to 16 inches diameter.

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CANNEL and COAL of the best descriptions for making GAS and COKE. As per Analyses in AMERICAN GAS-LIGHT JOURNAL for June 1, 1860, page 242.

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GAS COAL, 11s. 6d., 9s. 6d., and 8s. 6d. ℔ ton.
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All free on board Vessels in Liverpool.
Hand Picked Cannel and Coal about 10 ℔ cent. additional. Concession in prices made for large quantities.

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REFERENCES :

CHARLES ROOME, Esq., Pres. Man. Gas Co., N. Y.
J. K. BRICK, Esq., Eng'r Brooklyn Gas Co., "
Messrs. ELLIMAN BROTHERS, New-York.
F. T. WILLIS, Esq., Pres. Savannah Gas Co.
J. A. SABBATON, Esq., Eng'r. Man. Gas Co., N. Y.
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☞ Gas-fitting done in the most workmanlike manner, and on reasonable terms.

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Do. do., in numbers, per annum, $3
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TO GAS-COMPANIES, ENGINEERS, Merchants, Gas-Fitters, Surgical Instrument Makers, &c.
FLEXIBLE GAS FITTINGS.
The existing great demand for Hancock's ENAMELLED or GLAZED FLEXIBLE TUBING, and the increased facilities of manufacturing it, is an assurance of the satisfaction experienced by the public in the use of this article, so extensively made by JAMES LYNE HANCOCK, OF LONDON, who begs now to announce to the trade, that he continues to export, to a large extent, FLEXIBLE GLAZED TUBING for GAS, Surgical and other instruments, now in such general use amongst Gas Companies, Engineers, Gas-fitters and others.
This is the only TUBING that perfectly resists the action of coal gas. It is made of all sizes, from ¼ inch up to 1¼ inches, and in 60 feet lengths. The measure is always external diameter, to connect the usual metal fittings.
SOLID VULCANIZED INDIA RUBBER TUBING, for GAS, WATER, &c., made of all sizes, and in 60 feet lengths, either with or without spiral wire inside
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—N. B.—Orders by post, with remittance, or good reference in England, will be promptly executed.

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PATENT PYRO-CLAY GAS RETORTS. THOMAS HOADLEY, Patentee, wishes to call the attention of Gas-engineers to these Retorts, as a very superior article.
REFERENCES:—Gas-Light Works, Buffalo, N. Y.
" " Cleveland, O.
" " Chicago, Ill.
THOS. HOADLEY, 34 Front st., Cleveland, O.

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C. M. CRESSON'S CELLULAR GAS Retorts, Patented October 3d, 1854. Adapted to the manufacture of GAS from Rosin, Coal, Wood, &c., and now in use at the Philadelphia Gas Works. Patent Rights for sale. For information apply to HENRY S. HAGERT, Attorney for Patentee, S. E. cor. of Walnut and Sixth streets, Philadelphia, Pa.

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The results of this mode of setting, are a Saving of Fuel, Tiles, Transportation of Materials, Labor and Space, thereby enabling Gas Companies to set Retorts of at least 50 per cent. greater capacity than those usually employed in the ordinary arches.

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MORRIS, TASKER & CO, Philadelphia.
HORATIO EAGLE, 254 Canal-St., New York.
Or H. K. SYMMES, Newton, Mass.
See Engravings in AMERICAN GAS-LIGHT JOURNAL for July 1, 1860, page 280.

KENNEDY'S Method of Securing Iron Mouth-Pieces to Clay Retorts.—The Retort is made in the usual form, but without any bolt-holes through the flange. An iron collar made in two pieces, is then placed around the Retort behind the flange, and bolted to the mouth-piece by bolts which pass just outside of the flange instead of passing through it. As each Retort costs about $30, and as the breaking out of the bolt-holes entirely ruins the whole Retort, the importance of this simple but valuable improvement will be readily appreciated.
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JOHN P. KENNEDY, Trenton, N. J.

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For sale by JOHN JEFFREY, Cincinnati, Ohio.
Street Lanterns cast in three pieces, which are fitted together without bolts, rivets, solder or other fastenings; glazed without tins, putty, or catches; the glass slipping into grooves cast in the lantern. These lanterns have been adopted, and are now used, by the City Councils of Cincinnati, O., Covington, Ky., and other cities.

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P. S.—Our Cast Iron Lanterns are warranted to out last three Tin Lanterns.

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A. BRONSON, Pattern and Model Designer and Maker having had twenty-five years' experience, will assist and perfect inventions and designs. PATTERNS and MODELS made of WOOD, IRON, or BRASS (secretly, if desired,) on short notice.
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Metallic letters for patterns always on hand.
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Wrought Iron Pipe for Sale.
Jobbing promptly attended to.
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AUGUSTUS VIELE, Manufacturer of Gas and Water Pipes of all sizes. DRIPS, SYPHONS, BENDS, AND BRANCHES. The manufactures of this establishment are in use in various Gas and Water Works throughout the country.
Address AUGUSTUS VIELE, West Troy, N. Y.

HOPE IRON FOUNDRY, PROVIDENCE, R. I.
Gas-Work Castings of every description.
They would call attention to their superior IRON RETORTS, which are extenively used with good satisfaction; also to E. WALCOTT'S PATENT MOUTH and LID, possessing important advantages over any other in use, and are shown in a circular which can be obtained by addressing—
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EXCELSIOR IRON WORKS.—GEORGE R. JACKSON & Co., (Successors to Cornell & Jackson,) 201 Centre street, cor. of Howard, New York.—Fire-Proof Doors, Vaults, Safes and Shutters, Enameled Grates and Fenders, Iron Railings, for Public Buildings, Dwellings, Balconies, Verandahs, Stair-cases, Parks and Tombs, Prismatic Platforms and Vault Lights, Columns, Girders, and all kinds of Castings for Building purposes.
☞ Casting for the Trade.

OREGON FOUNDRY, Nos. 740, 742, 744 Greenwich street, New York.
HERRING & FLOYD, proprietors, manufacture Gas Compensators of all sizes, Self-Acting Valves, Exhausters upon an improved plan, costing less than half those of English manufacture, also castings of every description for Gas and Water Works.
Herring & Floyd offer for sale Sabbaton's Patent Screening Shovels for coke and coals, made of malleable iron, of all sizes; Sabbaton's Patent Improved Cast Iron Furnace Frame and Door, arranged to protect the iron work of the door and frame from direct contact with the fire; also Floyd's Patent Malleable Iron Retort Covers, only quarter of an inch thick, but of convex form, and of great strength, as is attested by certificates from several of the leading Gas-works in America. For engravings of all the above patents see AMERICAN GAS LIGHT JOURNAL for October, 1859, pages 65 and 71.
Samples of the above castings can be seen at the Rooms of the AMERICAN GAS-LIGHT JOURNAL.

S. V. MERRICK, J. VAUGHAN MERRICK,
W. H. MERRICK.
SOUTHWARK FOUNDRY, Philadelphia.
MERRICK & SONS, Engineers, manufacturers of every description of Gas Machinery.
Retorts, Bench Castings, Condensers, Washers, Scrubbers, Wet or Dry Lime Purifiers, Coke Wagons, Fire Tools, Wrought Iron Grate Bars, Gasholders, either TELESCOPIC OR SINGLE, WITH SUSPENSION FRAMES COMPLETE; Wrought Iron Roof Frames, for Iron or Slate; Stop Cocks, Exhausters, Steam Pumps, Boilers and Tanks, Steam or Hand Air Pumps for proving Street Mains, Centre Seals, Governors, Wrought or Cast-Iron Lime Sieves for Purifiers, Purifier Hoisting Machines, &c., &c.
Address— MERRICK & SONS,
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HUNTER, KELLER & CO., Manufacturers of
WROUGHT-IRON PIPES, AND FIXTURES
of all descriptions, for
STEAM, WATER AND GAS,
144 Centre street, New York.

TRANER & MERCER, 117 North Water street, and 124 North wharves, Philadelphia, AGENTS FOR FLORENCE & MERCER FOUNDRIES, ELK STREE IRON WORKS.
CAST IRON STREET MAINS; *Bends, Branches, Chemical Retorts, and all kinds of Castings for* GAS-WORKS, either COAL or ROSIN WORKS. SHEET IRON FOR GASOMETERS *cut and punched to order.* BOILER IRON *of all descriptions.* RUSSIA SHEET IRON, TIN PLATES, BLOCK TIN, COPPER, PIG LEAD, SPELTER, and Metals generally.

GEORGE W. KRAFT, GASOMETER and Boiler-maker, Chestnut st. wharf, West Philadelphia, manufactures Gasometers, Retort House Roofs, Water Tanks Purifying Boxes, Coal Cars, Coke Barrows, and all kinds of Wrought Iron Work for Bridges, Buildings, &c.
Particular attention paid to Alterations and Repairs.
REFERENCES:
John C. Cresson, Engineer Gas Works, Philadelphia; Joseph A. Sabbaton, Engineer Manhattan Gas Works, New York; Col. W. S. Campbell, Engineer Gas Works New Orleans; P. A. Sabbaton, Engineer Gas Works, Albany; Waterhouse and Bowes, Gas Engineers, Raleigh, N. C.; Joseph Battin, Newark, N. J.; C. B. Dungan, Philadelp.

GIRARD TUBE WORKS. MURPHY & ALLISON, Proprietors. Wrought Iron Coke-Welded Tubes, for Gas, Water, Steam, &c. Wrought, Cast and Malleable Iron Fittings, Steam and Gas Cocks, Valves. Also, Galvanized Tubes and Fittings.
Office 1908 Market street, Philadelphia.

MORRIS, TASKER & CO., PASCAL IRON WORKS,
[ESTABLISHED 1821]
PHILADELPHIA, manufacture Wrought Iron Welded Tubes for Gas, Steam or Water; Lap Welded Boiler Flues,
GALVANIZED WROUGHT IRON TUBES,
ARTESIAN WELL PIPES,
of Wrought or Cast Iron, screwed together, flush inside and out; Gas-works Castings, Retorts and Bench Castings for Coal gas works; Cast Iron Street Mains, Bends, Branches, Drips, &c.
GAS AND STEAM FITTERS' TOOLS, &c.
STEPHEN MORRIS, CHAS. WHEELER,
THOMAS S. TASKER, STEPHEN P. M. TASKER.

CAST IRON WATER, GAS, DRAIN, AND HEATER PIPES, &c.,
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J. B. BROWN & CO., Iron Founders, adjoining Railroad Depot, Peekskill, N. Y. Manufacturers of the U. S. Lamp-post Mail Boxes. Castings of every description, hard and soft, delivered in New York city. J. B. Brown and Co. manufacture all the celebrated Peekskill plows, also a new line of excellent iron-beam Plows, Gin-gearing, Road-scrapers, Agricultural machinery.
Attention paid to getting up patterns.

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STEPHEN COLWELL, W. DWIGHT BELL,
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TO GAS AND WATER COMPANIES:
The undersigned, Agent for Messrs. Thomas Edington & Sons, Phenix Foundry, Glasgow, Scotland, Is prepared to contract for all descriptions of Cast-iron Pipes of their manufacture.
About 6000 tons of these Pipes have lately been supplied to the Brooklyn Water-works, N. Y., and the Chief Engineer of the Works, A. P. Kirkwood, Esq., is ready to testify to their excellent quality.
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HENRY G. NICHOLS, 24 Pine Street, up stairs, Room No. 5, New York. Manufacturers' Agent for the Sale of Cast Iron Pipe, Bends and Branches for Gas or Water, Retorts, Lamp-Posts, Lanterns for Gas Lamp-Posts.

NORRIS & GREGG,
DEALERS IN WROUGHT IRON Pipe, and Manufacturers of Fittings for Steam, Gas, and Water, Nos. 62 and 64 Gold street, (between Beekman and Fulton streets,) New York.
THOMAS H. NORRIS. CHARLES GREGG.

PIPE, PIPE, PIPE, PIPE, PIPE.—Plumbers, and all others who use Cast-Iron Drain Pipe, will do well to call at the Pipe Foundry, 39 Greene street. A large lot of Five and Six Inch, Seven Foot length, on hand, and for sale low. A. & E. B. BRADY.

WATERHOUSE & BOWES, Builders of Gas-Works, Raleigh, N. C.—Gas-Works erected in any part of the United States.
REFERENCES.

J. H. Carson,	Pres't,	Charlotte,	N. C.	Gas-W'ks.
D. G. Fowle,	do.	Raleigh	do.	do.
J. C Smythe,	do.	Salisbury	do.	do
Arch. McClean,	do.	Fayetteville	do.	do.
Jos. A. Waddell,	do.	Staunton	Va.	do.
A. G. Story,	do.	Little Falls	N. Y.	do.
G. H. Young,	Prop'r	Waverley	Miss.	do.

Wm. Johnston, President of Charlotte & S. C. R. R., Charlotte, N. C., A. B. Wood, Agent Reading Iron Works, 57 Maiden lane, N. Y., Cornelius & Baker Manufacturers of Gas-fixtures, Philadelphia.
G. B. WATERHOUSE. M. BOWES.

BENJAMIN PIKE & SONS, Opticians, Importers and Manufacturers of Mathematical and Philosophical Instruments, No. 518 Broadway, (opposite St. Nicholas Hotel), New York.
Gold, Silver and Steel Spectacles; Barometers, Thermometers, Surveying Compasses, Theodolites, Levelling Instruments, Opera Glasses, Telescopes and Microscopes; Air Pumps and Electrical Machines. Instruments and Spectacles repaired. Periscopic Glasses and Pebbles.
DANIEL PIKE. GARDINER PIKE.

PORTABLE GAS WORKS.—S. T. McDOUGALL'S PATENT Portable Gas Works, for making Gas from Rosin, Rosin Oil, Coal Oil, Naptha, Grease, etc. These Works combine the latest improvements in gas making, and are guaranteed to be superior to any in market. They are made of all sizes, suitable for either country or city use. No county house is complete without its Gas Works. Gas Stoves of every description on hand and made to order. For sale by S. T. McDougall, 170 Center Street, New York.
Agents wanted in other cities to sell rights or machines.

GAS-LIGHT STOCKS FOR SALE.
THREE HUNDRED THOUSAND DOLLARS of Stocks in various Gas-light Companies in the United States, paying from 6 to 12 per cent. dividend, for sale by JOHN B. MURRAY, Rooms of the AMERICAN GAS-LIGHT JOURNAL, N. Y

KING BROTHERS,

STOURBRIDGE, ENGLAND, FIRE-BRICK AND RETORT WORKS.

KING BROTHERS beg especially to call the attention of Gas Companies to the superiority of their Retorts, which are made from the celebrated STOURBRIDGE FIRE-CLAY. Mr. King has patented a Kiln for Burning Retorts, by which Patent all Cold Air is excluded from the Kiln while burning, thus rendering them

FREE FROM CRACKS AND CORRECT IN FORM.

By great care in Manufacturing, combined with the advantages in burning, a VERY SMOOTH SURFACE is obtained, rendering them less liable to carbonize RETORT OVENS, FIRE-BRICKS, GUARDS, SADDLES, RABBITTED BURS, FLUES, AND QUARRIES, ARE ALL MANUFACTURED OF THE SAME QUALITY OF CLAY.

EVERY RETORT AND BRICK IS BRANDED "KING BROTHERS, STOURBRIDGE."

GEORGE WRIGHT & CO.'S

LIVERPOOL AND NEWCASTLE CANNEL AND COAL

FOR GAS MANUFACTURE AND HOUSE USE.

THE undersigned does not submit for comparison the result of chemical analysis, as this plan is too often adopted to promote the sale of inferior or worthless coals that in practice bear no particle of resemblance to their theoretical, and sometimes distorted descriptions.

He is authorized, however, to guarantee the *careful shipment of the best qualities of Cannel and Coal, at the lowest rates of Invoice and Freight offered at time of ngagement;* and any losses sustained by short weight, or the neglect of the conditions mentioned, will be promptly and cheerfully repaired.

OFFICE OF THE MANHATTAN GAS-LIGHT COMPANY,
New-York, October 8th, 1859.

Messrs. GEORGE WRIGHT & Co., Liverpool:

Gentlemen,—For many years you have acted as agents for this company, purchasing for, and forwarding to them, coals, retorts, and other gas apparatus.

Your experience, ability and sterling integrity, entitle you to and have secured our confidence, and we cheerfully recommend your house to all gas companies desiring the services of an agent in England. My own personal knowledge of the superior quality of the coals within your control, and my acquaintance with the manufacturers of such articles as can be advantageously procured by you in England for gas companies abroad, added to my high regard for you personally, induce me to write this letter, and express the hope that you may be able to extend your business in this country, not only for your own advantage, but also for the benefit of those who may confide in you as securely as we have done.

I am, gentlemen, your very obedient servant,
CHARLES ROOME, *President.*

T. W. PARMELE, Agent,
No. 4 Irving Place, New-York,
GAS-EXHAUSTERS,
GOVERNORS, FURNACE DOORS,
RETORT-COVERS, CASTINGS,
IMPLEMENTS,
PHOTOMETRICAL AND METER-PROVING APPARATUS.

HARRIS & PEARSON,

PROPRIETORS OF

BEST GLASS-HOUSE POT, AND CRUCIBLE CLAY.

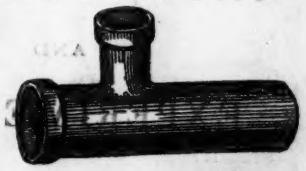
Manufacturers of Fire-Bricks, Gas-Retorts, and Glass-House Furnace-Bricks of every description.

TAMBLECOTE FIRE-CLAY AND BRICK WORKS, STOURBRIDGE, ENGLAND.

GAS, STEAM, SMOKE, PURE WATER AND SOIL PIPE,

CLAY RETORTS, TILES, BRICKS,

AND EVERY VARIETY OF FIRE GOODS.

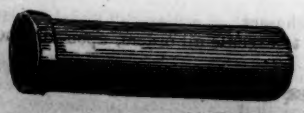


JOSEPH CLIFF,

WORTLEY FIRE-BRICK WORKS,

Near Leeds, England.

T. W. PARMELE, Agent, No. 4 Irving Place, New York.



MEDALS AWARDED TO THOMAS GLOVER'S PATENT DRY GAS-METERS

MANUFACTORIES

SUFFOLK ST. CLERKENWELL GREEN. & ALLEN ST. GOSWELL ST. LONDON

THOMAS GLOVER introduced his PATENT DRY GAS METERS into the United States and Canadas in 1846, and since that time he has received extensive patronage from many Gas Companies of those countries as well as from this. Thomas Glover confines his sole attention to the business of Gas-Meter making. The propriety of his doing so is satisfactorily proved by his success. For example: one London Company has now in use above 12,500 of his Patent Dry Gas-Meters, and some of these Meters have been fixed for fourteen years and are still in working order, without complaint from either the company or the consumer.

THOMAS GLOVER thinks it necessary to put Gas Companies on their guard against parties selling Patent Dry Gas-Meters constructed in imitation of his, but unskilfully made on erroneous principles, and with improper and unsuitable materials.

THOMAS GLOVER's Workshops are now the most extensive in this or any other country, and he is thereby enabled promptly to execute orders to any extent required. Purchasers may, at any time, inspect his Works and the materials of which his Meters are constructed.

Suffolk Street, Clerkenwell, London, and 1 Barrett Street, Fulton Street, Boston.

SAMUEL DOWN,

Nos. 340, 342, 344 and 346 West Twenty-second Street, North River, NEW YORK CITY,

MANUFACTURER OF

WET AND DRY PATENT GAS METERS,

Pressure-Registers, Pressure-Indicators and Gauges, Station, Show, Customer, and Experimental Gas-Meters, Centre or Hydraulic Valves Governors, Compensators for Exhausters, and the Standard Testing Gas-Holders* for Proving Meters, now used in the State of New York in compliance with an Act of the Legislature. Also, Bunsen's Photometer, with complete Apparatus for working the same.

*The standard of measurement of this Gas-Holder is given by Professors TORREY, of the U. S. Assay Office; JOY, of Columbia College; GIBBS, of the Free Academy and several other distinguished scientific gentlemen.

JOSEPH LENNIG & CO.,

Nos. 313 and 315 NEW MARKET STREET, above Vine Street,

PHILADELPHIA, PENN.,

MANUFACTURERS OF

WET AND DRY

PATENT

GAS-METERS,

STATION,

SHOW, CUSTOMER,

AND

EXPERIMENTAL

METERS,

PHOTOMETERS,

PRESSURE REGISTERS,

INDICATORS,

AND

GUAGES,

GOVERNORS, METER PROVERS,

CENTRE SEALS,

FLUID GUAGES, &c.

The flattering Testimonials we are receiving from Gas Officers, accompanied with expressions of such general satisfaction, and the fact of a tried experience for fourteen years, must present itself as a security to parties desirous of securing the most reliable Instruments. We therefore recommend our Patent Dry Gas-Meter, believing it superior to any Meter manufactured. Messrs. J. LENNIG & Co. confine their sole attention to the business of GAS-METER making.

Our materials are the best in use; the strictest attention is given to workmanship, and we guarantee entire satisfaction to all purchasers.

Purchasers may at any time inspect our Works, and the materials of which our Meters are manufactured. We are fully prepared to execute all orders, upon the shortest notice, and it will be to the interest of parties to call upon us.

☞ Each Meter Tested Separately by a Sworn Inspector, and Sealed when desired. ☜

METERS REPAIRED AND FORWARDED WITH DISPATCH.

BENCH OF SEVEN GAS-RETORTS.

Fig. 1.

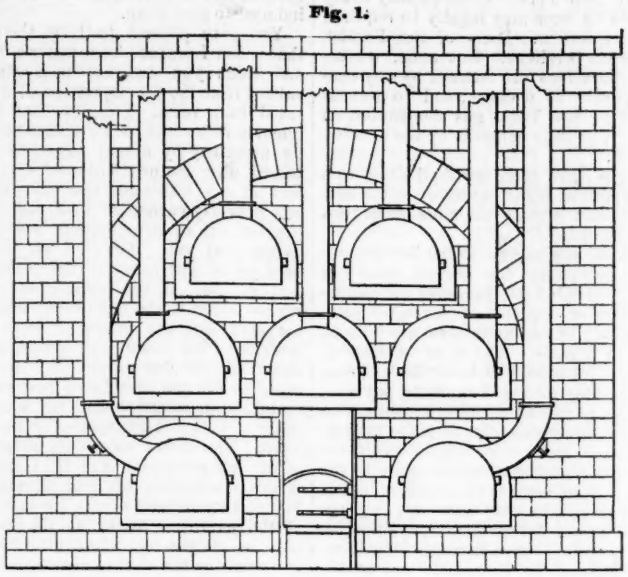


Fig. 2.

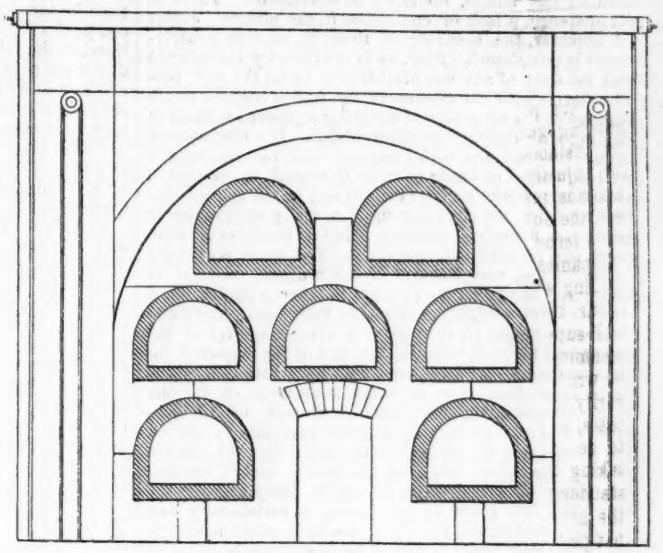


Fig. 3.

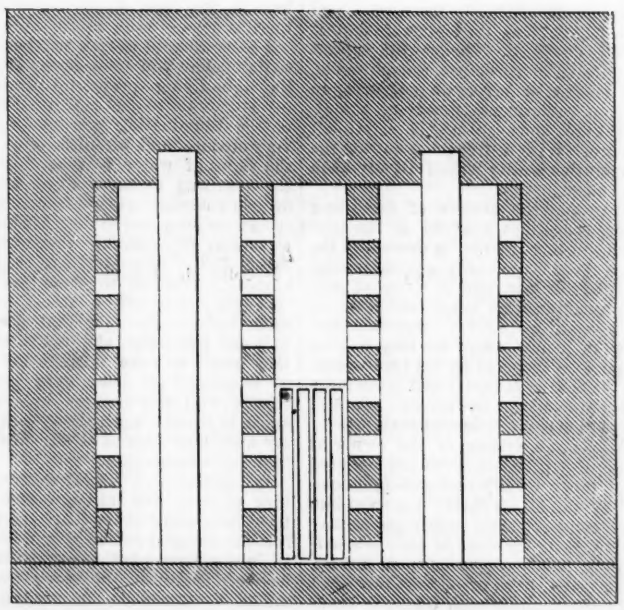
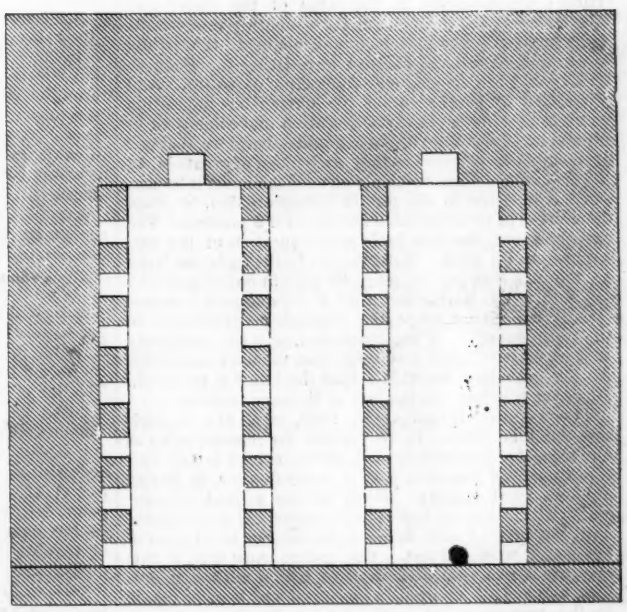


Fig. 4.



Foremost among the subjects which claim the attention of gas-engineers, is the most economical method of constructing and arranging the retorts in which coal is distilled. The quantity of rich illuminating gas which can be obtained in a specified time, from any given quantity of coal, the consumption of fuel required, the preservation of the retorts from deterioration and the maintaining the gaseous products as far as possible of a uniform quality are important points, and can only be attained by adoption of all those improvements which the study of the scientific principles involved may suggest to the intelligent observer. The modes of setting retorts differ as well as their form, size and material.

In France, benches of 7 retorts are at present most commonly in use. We therefore think it may be interesting to our readers to see the annexed engraving of a bench whose product was very abundant and satisfactory. The drawings have been made on a scale of $\frac{1}{8}$ inch to the foot. We are indebted to the editor of *Le Journal de l'Eclairage au Gaz*, for the electrotypes, and present them to the companies of the Western Continent, as being interesting to them in common with those of Europe.

Fig. 5.

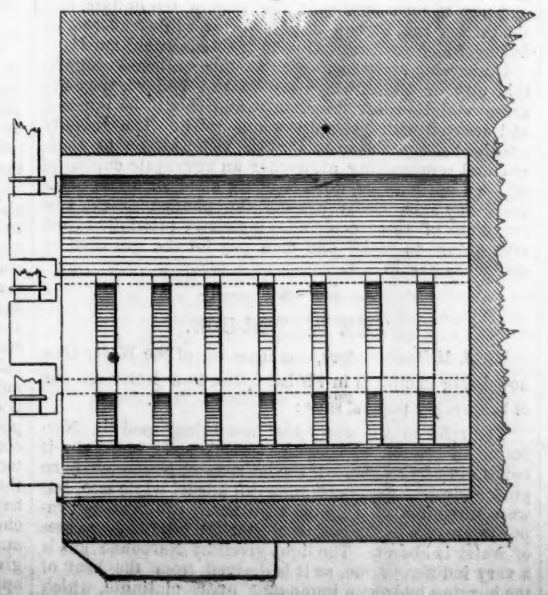
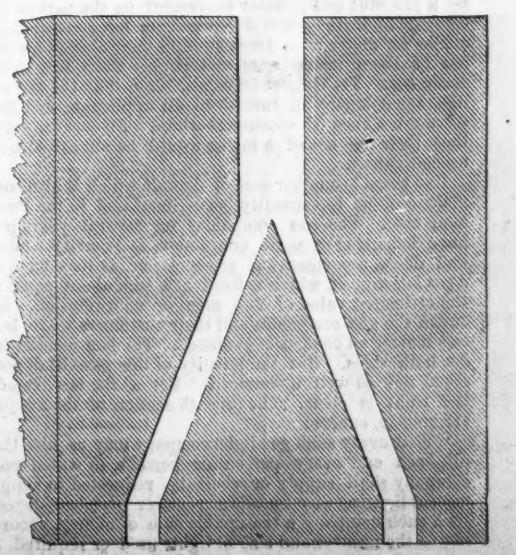


Fig. 6.



THE NEW-YORK GAS-LIGHT CONTROVERSY.

In the public mind, at this moment, there exists, regarding gas affairs, no small dissatisfaction. There is, for instance, a lack of confidence in the meters. Justly or unjustly, the accuracy of these registering contrivances is questioned. Now, as it is evidently the interest and the duty of any manufacturer to be on the best possible terms with his customers, we would suggest to the companies the propriety of adopting a prompt method of dealing with this species of complaint. If a discrepancy occur between the meter-register and the consumer's well-supported estimate of what it should be, instead of assuming that the register cannot err, or the gas account be wrong, let the company show a ready willingness to verify the meter's accuracy. The law provides for such cases, and points out this remedy. The meter is directed to be proved and tested. If the ordinary method of taking out the meter be too expensive or troublesome, a standard meter might, perhaps, be introduced alongside the house meter, so that when a given quantity of gas has passed through both, the register of the suspected instrument could be compared with that attested by the State Inspector. And as some consumers on the one hand, complain that the companies furnish meters purposely made to register against the consumer, while, on the other hand, the companies complain that the fault is oftener the other way, and the meters record less and not more than the truth, let either party exercise the right the law gives, of instituting a satisfactory test. Usually, we believe, the companies have paid the expenses of all such trials, whether the result has been for or against them, and, unless in vexatious and exceptional cases, it should be so. The practical difficulties of some satisfactory method of removing doubts, and establishing, beyond question, the truthfulness of our gas bills, are not too great to be easily overcome.

Again, consumers have complained about gas-meter deposits. The companies, it is alleged, charge for meters twice over, first requiring at the opening of any new account, a deposit equal to the value of the meter, and then charging for the same meter a monthly rent beside. Were any such two-fold payment claimed, the public would undoubtedly be justified in resisting it. Such an abuse could be defended on no principle of justice. And if fortified by legal sanction, the outrageous imposition would render infamous any corporation that attempted to enforce it. *A priori*, we might conclude, therefore, that our gas companies officered as they are by men of great ability and discernment, are too keenly alive to their own interests, and too sensitive to the public disapprobation, to place themselves in so unenviable and so false a position. The case, however, resolves itself into a question of law and a question of facts. With regard to the facts, we have on the one side the evidence of certain consumers who are under the impression that they have paid a meter-deposit, and on the other the decided contradiction of the representatives of the companies, who say positively that no meter deposit has ever been made or asked for. As for ourselves, we think that the latter is the truth. However this may be, the law of the case is plain.

The statute of 14th April, 1859, cap. 311, is decisive on this point. It recognizes no remuneration as due from the consumer for his meter except a rent, and if any person has ever paid a meter-deposit, he has an obvious legal remedy. When he has proved his case, which will be an easy task if he has preserved his vouchers and receipts, he can demand the instant restitution of his money with interest. The meters now used in this city, are worth very little short of half a million of dollars, and are all required to be owned and kept in repair by the respective companies, the only return allowed them for their heavy outlay in providing these registering instruments, being, as we have said, a rent proportioned to the original cost. The companies acknowledge themselves to be in the position we have described. Consequently we expect to hear no more of the meter-deposit question. As, however, some ill feeling has been awakened in regard to the charges for meters, it would be a graceful and popular movement on the part of the companies if they would consent to forego their legal claims for meter-rent, discontinuing their charge for the use of those instruments, and supply them free to the consumer. Yet it must be remembered that the law obliges the company to furnish to all applicants, and that there are a class of consumers whose bills are so small that their free use of a meter would be almost without an equivalent.

But there is another sort of deposit which is also complained of as has recently been illustrated in the Peckham case. The gas companies for several years past have demanded of some consumers, as security against bad debts, a payment in advance; or, as they term it, *a gas-bill deposit*, which is fixed at a sum about equal to the estimated value of two months' consumption. Between the gas companies and their customers there is in this matter no conflict of evidence. The fact is admitted on both sides. But the legality of this gas-bill deposit seems not so well understood. Yet, as the law stands, the right is clear. The seventh section of the act just referred to, enacts:

"That every such gas-light company may require that all, each and every person or persons, to whom such company shall supply or shall be requested to supply gas for lighting any building, room or premises, deposit with such company a reasonable sum of money, according to the number and size of lights used or required, or proposed to be used for two calendar months, by such person or persons, and the quantity of gas necessary to supply the same, as security for the payment of the gas rent, or compensation for gas consumed, or rent of meter, pipe and fixtures, to become due the company."

This statute applies to all the gas manufacturing companies in the State of New York. Consequently every consumer of gas within its area may legally be required to make the deposit in question. Many of the English companies enjoy the same privilege. But none, we believe, of the latter corporations are fettered by any condition adapted to operate as a check, and to prevent needless exactions. The New York gas companies, on the contrary, are curbed in their demands by the proviso, under the same section,

"That every such gas-light company shall allow and pay to every such depositor, legal interest on the sum by him deposited, for and during the time his deposit shall remain with the company."

The effect of this wise appendage to the law is obvious. So long as our companies can borrow money in Wall-st., at 5 per cent. there is little danger of their overburdening themselves with deposits at seven per cent. Hence about one-fifth only of the consumers' gas-bills in this city are secured by deposit. And it, as is affirmed, the demand is confined so far as possible to our floating population, from whom the only means of assuring payment at all is to receive it in advance, no objection should be raised to it. For small, comparatively, as is the proportion of advance-payers to those who receive credit, the deposits, according to published statements, cause to the companies an annual loss of several thousand dollars in interest alone. This evil, however, they say, they are compelled to submit to as an indispensable condition for the averting of far greater losses through defaulters. Since, therefore, four-fifths of the consumers are practically regarded as safe and capable of receiving credit, the deposit question resolves itself into this form: Shall the gas companies exercise the inalienable right of every man to choose whom he shall trust, or shall a manufacturing copartnership bound by the law to sell their property to all comers, be prevented from securing themselves and the public, even at some loss in interest of money, against fraud or dishonesty in their unknown customers? It must be borne in mind that the law compels the companies to furnish the gas; and surely then it is but just that they should protect themselves from being swindled. The gas bill deposit thus viewed seems equitable in its nature, though liable, through infirmity of temper, or errors of judgment, to be a source of occasional resentments, vexations, and affronts. Most of these evils, however, may be safely left to work their own cure. With a free press outside the company, and administrative ability within it, any such abuses will be kept in check.

Another complaint is, that the arrears of defaulting consumers have been sometimes charged to the next tenants. The existence of this practice is denied by the companies. Any such claim is obviously unjust, though in some parts of Great Britain and in a few of our American cities, it is sanctioned by usage and law. It has been affirmed that there are British cases on record in which the property of a new tenant has been sold by the sheriff to pay a gas debt incurred by his predecessor. The law of this State is not so absurdly and intolerably unjust. No person is liable except for his own gas bill. This is evident from section 6, which enacts that

"Upon the application, in writing, of the owner or occupant of any building or premises within one hundred feet of any main laid down by any such gas-light company, and payment by him of all money due from him to the company, the company shall supply gas as may be required for lighting such building or premises, *notwithstanding there may be rent or compensation in arrears*, for gas supplied, or for meter, pipe, or fittings furnished *to a former occupant* thereof, unless such owner or occupant shall have undertaken or agreed with the former occupant to pay or to exonerate him from the payment of such arrears, and shall refuse or neglect to pay the same; and if, for the space of ten days after such application, and the deposit of a reasonable sum as in this act provided (if required) the company shall refuse or neglect to supply gas, as required, the company shall forfeit and pay to such applicant the sum of ten dollars, and the further sum of five dollars for every day thereafter during which such refusal or neglect shall continue."

If, therefore, any such cases as those alleged occur in this city or State, which we do not believe, they are gross violations of the statute, and should be opposed and resisted with promptness and spirit. The seventy gas-light companies in this State, rich as some of them are, and representing altogether an aggregate capital of thirteen millions of dollars, could none of them make good any such claim against the poorest citizen, for every one of these companies is strictly prohibited from attempting to make one man pay for the gas used by another.—*The World.*

THE WATER-GAS.

Mr. J. Milton Sanders, the inventor of the Water-Gas, now being exhibited in Philadelphia, in a letter to one of the weekly papers, says:

You refer to the water-gas now being used in Narbonne, in France. This you assert is *real* water-gas; it being pure hydrogen. If the citizens of Narbonne burn pure hydrogen gas, (and they did a brief while ago, but were discontented with it) then their illuminating vapor is not *real* water-gas, as one of the constituent gases of water is absent. The light given by Narbonne gas is a very indifferent one, as it is derived from the heat of the burning hydrogen impinging upon platinum, which metal becoming white hot, gives out an illumination which is far from being satisfactory. The first experiments I made upon water-gas, were similar to those formerly burned at Narbonne (for I believe it has been discarded) but it proved so unsatisfactory that I was soon induced to give it up.

You were pleased to term the gas of Mr. White and that which I prepare from water a "so-called water-gas," and which you designate as a mixture of the gases resulting from the decomposition of water with that generated from resin. I regret that before you had so frequently reiterated such a statement you had not learned its absurdity by actual experiment. It has been ascertained, after the production of several millions of cubic feet of my water-gas, that twenty-five pounds of resin will properly carbonize 1,000 cubic feet of this gas until it gives out an illumination one-third greater than ordinary coal gas. Now, we all know, that resin when used *per se*, will produce but *one hundred* and *fifty* cubic feet of gas. If the addition of twenty-five pounds of resin—added to the light carburetted hydrogen and the carbonic oxyd gas produced from water by its decomposition in the presence of ignited carbon—produce 1,000 cubic feet of gas which give out an illumination fully equal to the gas generated from resin, then how do you sustain your assertion that my water-gas is resin gas diluted? It is just this species of dilution which the public want. The above assertions relative to the quantities of the gas produced, and the illuminating properties of it are susceptible of demonstration. You can satisfy yourself upon these points, by calling upon the engineer of the water-gas works at the Girard House, Philadelphia, where you can witness the manufacture of the gas, and examine the statistical tables there obtained. But I wish to direct your attention to another fact, of which I desire that you will satisfy yourself experimentally. If resin is allowed to flow into ignited carbon at the temperature necessary to produce good water-gas, there is not produced any illuminating gas whatever, but on the contrary such a large quantity of carbonic acid gas is generated that *no illumination* is the result. Thus you perceive that my water-gas cannot be the constituent gases of water diluted into resin gas—or as you would have it, the light is not derived from the resin gas, as there is none of that, as an illuminating gas, present.

I have thought proper to mention these facts to you, so that before you again assert that the water-gas derives its light-giving properties from resin gas, you may investigate the subject experimentally. Your description of the illuminating gas used at Narbonne, France, is very obscure and unsatisfactory. You inform us that the vapor of water is passed into a furnace, and that the resulting carbonic oxyd and light carburetted hydrogen gases are taken out from above. But from what source do they derive that amount of carbon necessary to impart illuminating properties to these gases, or rather to the latter gas? If they attempt to give illuminating qualities to these gases derived from water, they will necessarily be forced to resort to the use of some hydro-carbon for that purpose. In that case, if they are successful, and adopt the most feasible plan, they would at once infringe my patent there. In fact, so impressed are these very manufacturers with this trouble, that they are now in communication with my agent in France, upon the subject of the introduction of my water-gas instead of the insufficient light they have hitherto been making.

In conclusion, I would say, that after the manufacture of over five million cubic feet of my water-gas, those possessing it have arrived at the conviction, that it is the cheapest and most brilliant gas that can be made. In fact, so strong is this conviction, that despite the interested opposition of heavy capitalists, they have resolved to introduce the water-gas to the public, in all the principal cities in this country and Europe.

J. Milton Sanders.

New-York, August 11, 1860.

GAS-LIGHTING BY ELECTRICITY.

BY ARCHIBALD WILSON.

From the Journal of the Franklin Institute.

To render the application of electricity to the lighting of gas practically a success, several things are required, the want of any one of which is sure, sooner or later, to disappoint both the experimenter and the public. The mode of application must be simple, easy to adjust, efficient, reliable and economical. The method or plan that shall claim public patronage must combine all these requisites. Science seems to have demonstrated that electricity is susceptible of such an application but upon two general principles—one is by using the current to heat a platinum wire; the other to generate the electric spark. While it has been as universally admitted that the latter would most fully furnish all the requisites for success, if it could be applied, yet, with the exception of very limited experiments in the laboratory or lecture-room, it has been as universally abandoned as impracticable for the following reasons supposed to be insurmountable: First, the current which generates the spark is of such extreme intensity, that it has been deemed impossible so to construct a long circuit as to protect or control the current for any great distance, owing to its tendency to fly off to surrounding objects. And, second, the instruments heretofore used to generate the spark have been so extremely susceptible to atmospheric changes as to become entirely inoperative in a moist atmosphere. Hence, experimenters in this direction have given their attention and skill almost exclusively to the application of the heated wire to this purpose. Still, the difficulties which attend this plan were so early presented,

and so clearly brought out by the late Dr. Hare of your city, that it would seem that the most unscientific experimenter must have been convinced of its impracticability beyond a very limited success.

These difficulties are, first, the current used to heat the wire is a quantity current, and generated by a voltaic battery. Consequently, the entire source of the power is constantly decreasing in efficiency, and wearing away under the action of the acids upon the metals used. Frequent repairs, therefore, become necessary. Then, as the number of wires to be heated is increased—and there must be one of these wires over each burner—or the length of the circuit is extended, the source of the power must be increased also, till, where a large number of burners is used, and the current is to be passed through a long circuit, the battery becomes immensely increased and the outlay to replenish it and keep it in repair is correspondingly large, as five hundred pairs of plates, other things being equal, wear out just as rapidly as five pairs do. Hence, it becomes a very great desideratum, economically, to reduce the number and size of the plates as much as possible, and yet produce the desired result.

Other difficulties, quite as serious practically, are continually met with in the wires to be heated; the least variation between them, either in their length, thickness, or the quality of the metal, being sufficient to prevent the gas from being lighted, owing either to the fusion of some of the wires by the current, or the failure to heat others sufficiently. And then these wires, as one must be placed directly across the top of each burner and stand permanently in the jet of burning gas, soon become encrusted with a thick coating of soot. In this condition, the action of the battery must be continued till both the wire and its coating of soot are heated to the point for igniting the gas; or if the battery has fallen below the required power to heat these, it fails altogether to light the gas. In either of these cases the room is unavoidably being rapidly filled with the escaping gas. The length of time required to coat these wires with soot, will vary with the purity of the gas used. Another difficulty with such wires is, that though the battery-power might be sufficient to heat the wires, yet a gust of wind or a too strong pressure of gas striking them will often cool them down below the igniting point, and time must be given for the gust of wind to cease or the gas to be regulated to the proper pressure.

This plan of lighting gas by the heated platinum wire demands, in all cases, an absolutely unbroken metallic circuit. The least break in the circuit, though it amount to no more than the hundredth part of an inch, is amply sufficient to prevent all action in the battery and to leave a room or street in total darkness till such break is repaired; and this break can be repaired only by searching for it through the entire length of the circuit, as this can give no sort of signal to inform the operator where the break may be found. Though this plan may be adjusted with the greatest exactness, and even so as to do the work, with the greatest care of the operator, for several days or weeks; yet, in an instant, from some unaccountable variation in the action of the battery, a wire is fused and the circuit broken, thereby producing the most serious annoyance at the most important junctures.

The difficulties of this plan, so clearly brought out by Dr. Hare and others, have led all scientific experimenters to abandon the hope that it can ever be applied with any permanent and satisfactory result, and to base their expectations and hopes upon the use of the electric spark for this purpose, should an instrument not liable to change with atmospheric changes and of sufficient power ever be invented. The spark, as it results from great intensity of the current and leaps through free air, does away at once with all necessity for preserving an unbroken metalic circuit, since its success in gas lighting depends upon a break over each burner; and also does away with the small platinum wires to be heated over each burner. It was not until the discovery of the spark from the induced current generated by an instrument which was in no sensible degree susceptible of atmospheric changes, that a current seemed to have been discovered that could be relied upon permanently to do this work. It was an examination as to the reliability and efficiency of this current that led me to the conclusion that in it was contained all the power that the most enthusiastic experimenter in this direction could desire. It has been with this current, mainly, that my experiments have been made, and it is my application of this current to the lighting of gas that I desire to exhibit before you this evening. Before making my experiments, I will, with your permission, give a short explanation of my mode of applying this current. I think I shall be able to satisfy you that the number of burners to which I apply it this evening will exhaust but a very small portion of the power which I have here. I have connected my insulators and wires with the ten burners of your room and with the fifty-six burners of the chandelier which I have suspended from the centre of the room. In order to save the power of my current and use it with the utmost efficiency, I insulate all the burners in the room, by placing between the burner and the gas-pipe two small pieces of some non-conducting material, in this case hard rubber, which bears a high degree of heat. The lower piece of rubber is furnished at one end with a female screw, and fitted to the gas-pipe or fixture; the other end has a male screw and is fitted to the burner. Before putting the burner on, I slip over the male screw of the insulator a looped copper-wire—in this case No. 24—and then another small piece of insulator; after which I screw on the burner. The looped wire is then bent over so that the end comes just outside the jet of gas, and within an eighth or a sixteenth of an inch from the top of the burner. I then connect a looped wire with a burner or two looped wires and two burners in succession till all are connected, and these with my instrument; when my circuit is complete, with each burner making part of the circuit. For the sake of showing the safety with which I can pass over even the smallest wire any amount of current which my battery and coil can generate, my circuit wire is in this case No. 36 uncovered copper wire. My connexions are now complete, and by means of the insulators at each burner the current will be made to pass around on the top of the burners, and as the electricity leaps across the space from the looped wire to the burner, the spark will appear and ignite the gas with the rapidity of lightning.

The electro-motive power which I use is a voltaic battery and Ritchie's improved inductive apparatus. My battery by itself, and when applied to the heating of platinum wire to show its efficiency, is barely sufficient to heat wire enough to light two burners. If applied to a short piece of my conducting wire, No. 36, it would instantly burn it off. When connected with my coil it will not heat the smallest platinum wire that I have been able to obtain, and will pass with perfect safety over the smallest conductor. And yet I think I shall be able to show you that this current from a battery so inefficient in itself, will, with the coil, ignite 500 or even 1000 jets instantaneously; thus increasing my battery-power several hundred fold. By bringing the pointers at the poles of my coil within one inch and a quarter of each other and allowing my wires to be connected with the chandelier, I think I shall show you that this current, rather than leap across a single space of free air one inch and a quarter long, will leap across the fifty-six spaces on the chandelier, whose aggregate distance is eight inches. I shall also show you that if I break the wire entirely away from one pole of the coil, I shall yet light a large proportion, if not all, of the jets on the chandelier. Or if a break accidentally occurs anywhere along the circuit, the spark will at once notify where the break is by the smart cracking sound which it will give.

The coil, which is the main source of the efficiency of this plan, does not wear out and needs no replenishing. The only part that does wear out and that can require expense to repair, is the very small battery which I use, which can scarcely require the outlay of a shilling a month to keep in repair. The acid in my battery I have often reduced to 1 part to 24 or 30 water, using Smee's battery. No variation in the battery endangers the circuit, and the whole arrangement is so simple that anybody can keep it in repair.

With 5 Smee's cups, plates 8 inches square and a very weak acid, I have sent this current over 600 miles of telegraph wire, without the aid of a single cup of a relay battery, and obtained a spark 2½ inches long. So that, had I a wire connected with all the street lights of your city and ending at my instrument in Wall Street, New York, I believe I could light your whole city from my office.

A gust of wind or high pressure of gas striking on this spark has no other effect than to increase its size, and thereby add to the certainty of igniting the gas.

The advantages of this method are then:

1. It avoids the extreme care required in other plans to preserve an unbroken metallic circuit.
2. No degree of variation in the battery-power will endanger the connecting wires, though reduced to the smallest size.
3. The waste of the battery is reduced many hundred fold, and the expense of keeping in repair is proportionally decreased, while its efficiency is as greatly increased by connecting with the inductive apparatus.
4. If a break in the circuit occurs out of place, a large proportion of the jets will still be lighted, while a smart cracking sound will at once direct the operator to the place where the break may be found.
5. No pressure of gas or gust of wind can affect the efficiency of the spark to do its work.
6. The smallest spark is amply sufficient to ignite gas.
7. This current is readily controlled, as is proved by its passing over 600 miles of telegraph wire with ordinary insulation—a length of circuit more than sufficient to reach every public light in the largest city of the Union.
8. It insures great saving of gas, from the fact that rooms need not be lighted till the moment they are wanted.
9. By removing all necessity for the use of matches and torches about buildings, it affords great security against fire.
10. The conducting wire may be passed through the most inflammable materials with perfect safety, as the current used will not heat the smallest wire.
11. Its simplicity enables any one to operate and keep it in repair.

WESTCHESTER, PA.—Buckwell & Brick, builders. Have used Merrick & Sons' iron retorts, and are now adding J. K. Brick's clay retorts. Use Harris's & Down's meters, and a gas-holder of Merrick's manufacture. Westmoreland coal is used, "costing from $5 55 to $9 75 per 2000 lb." How this enormous difference in price can exist we are not advised. No meter-rent charged. About 5 miles mains laid, from 3 to 8 inches diameter.

ROCK ISLAND.—Works built by William H. Herrick. Thomas Hoadley's clay retorts used, and Gratz's meters. Illinois coal is delivered at the works at 9 cents per bushel of 80 lb. No photometer is used, but the gas it stated to be of twelve candles power. Meter-rent 25 cents per month. About two miles pipe laid, from two to four inches diameter.

OPPOSITION BALLOON LINE TO LONDON.

Mr. Samuel Wilson, the aeronaut, who lately made an ascension from Pittsburg, Pa., proposes to make Boston, Mass., the starting point for his experiment of attempting to cross the Atlantic in a balloon. In a letter, dated Philadelphia, August 17th, he says:

"I have constructed the balloon 'Great Western,' and also the 'American Eagle,' for the express purpose of making a voyage with them to Europe. They cannot furnish gas to inflate them at Pittsburg or Allegheny city. I have thought of coming to Boston and making my first trip across the Atlantic with Boston gas, if the gas company can furnish me with one or two hundred thousand cubic feet.

"I would like to start for Europe by the 1st of October, if not before, and would give several lectures on the subject of Aerial Navigation, and the Currents of the Atmosphere, and endeavor to show that a balloon ride across the ocean would be as safe as taking passage on board of the Great Eastern.

"I would keep the balloons inflated at Nahant, Mass., or on the Fair Grounds a few days before leaving for Europe, and hundreds of your citizens might have the pleasure of riding a few hundred feet in height with a strong rope attached to each air ship.

"If any one of your scientific citizens or those connected with the press, desire to go with me on my trans-Atlantic trip, I would be glad of their company, and land them safe and sound in less than three days in some part of Europe."

We shall send a reporter for the AMERICAN GAS-LIGHT JOURNAL with Professor Wilson, unless Lowe carries him off first. He has been waiting for Lowe since last September—a year to day—but he is not at all impatient.

SPHEROIDAL STATE OF WATER.—Every one is acquainted with the phenomenon called the spheroidal state of water, shown in the globular form assumed when a small quantity of the fluid is thrown on a red hot metallic surface. Boutigny stated that "the temperature of bodies in the spheroidal state is invariable, and always below their boiling point; for water, it is 205° F." Other authors give different statements, and the question could not be decided by the ordinary way—viz.: plunging a thermometer into the liquid—as the heat radiated from the incandescent surface, was always enough to effect the result. A different method of solving the problem is adopted by M. de Lucas, professor of chemistry at the University of Pisa, who uses water which is rendered blue by the iodide of starch, which, it is known, begins to be discolored when the temperature is raised to 120° F., losing color entirely at 176°. If a little of this water be thrown into a red hot platinum crucible, it assumes the spheroidal state, but is not discolored. From this fact, it is evident that the temperature in question is certainly below 176°, and, probably, as low as 120°.

WATER WORKS IN EGYPT.—The viceroy of Egypt recently inaugurated, in the city of Alexandria, the new works for the distribution of water, and the new promenade in Consuls' square. His Highness, surrounded by a brilliant staff, placed himself in a splendid tent on the Promenade, and gave a signal, at which two columns of water rose to a height of 60 feet from two basins. The crowd hailed the sight with acclamations. Alexandria, though with a population of 150,000 souls, has hitherto only been supplied with water collected by aqueducts in old cisterns from the overflow of the Nile; but the new works bring water direct from the Canal Mamoudieh, fed by the Nile. The water is filtered in immense basins, and is then distributed in all parts of the town by conduits nearly 40,000 yards long. Distribution is effected by means of steam engines, and the third ready to replace either in case of accident. The new promenade gives fresh air to the city. It has alley 350 yards in length, sheltered by trees, and is ornamented by basins and marble seats.—*Galignani.*

SARATOGA SPRINGS, N. Y.—This company was well watered at the start, but getting into the hands of practical men, the capital has been reduced, and Mr. Durkee's management has brought the works into a good shape generally. They use iron retorts, Down's & Gratz's meters, and a photometer. Coal from Pennsylvania Coal Company and Liverpool. No charge for meters. The transient nature of the population, mostly strangers, who flutter away for six weeks in the large hotels here, limits the heavy consumption of gas to a very brief period. The Corporation own a few public lamps, which are seen only in the day time, so that the dividends are not very fat.

WHEELING VA.—Builder of the works, Mr. John Jeffrey, of Cincinnati, O., and are entirely satisfactory. Sweeny's iron retorts used, Gratz's meters, also a photometer. Length of mains 8 miles, of 2 to 8-inch pipe. Virginia coal used, at $1 50 per ton of 2240 lb. About 12,000,000 cubic feet of gas made in 1859. The report adds, "works prosperous, well built, economically managed, and no accidents."

RALEIGH, N. C.—Rosin works, built by Waterhouse & Bowes. Iron retorts from Traner, Jones & Co., and gas holder of G. W. Kraft. These works use a photometer. Rosin costs in Raleigh 90 cents per barrel. No rent charged for meters. Three miles of pipe laid, from 3 to 6 inches.

STAUNTON, VA.—Rosin gas works built by Waterhouse & Bowes; give entire satisfaction. Iron retorts, built by Mr. Reddy, Little Falls, N. Y. G. W. Kraft's gas-holder, Code, Hopper & Gratz' meters. No charge for meters.

THE AMERICAN GAS-LIGHT JOURNAL is published on the 1st and 15th of every month, and is specially devoted to

LIGHT, HEAT, WATER-SUPPLY, AND SEWERAGE.

Its purpose is to ascertain and make known all new discoveries in the science and economical application of LIGHT, and promote thereby the interests of companies and consumers; to encourage and aid the introduction of PURE WATER from Lakes and Rivers into Towns and Cities, and to improve the system of SEWERAGE, VENTILATION, and DRAINAGE everywhere.

Incidentally with these results, the business of all Gas and Steam Fitters and Plumbers; the erection of Gas-Works and Water-Works; the consumption of Coals, the manufacture and consumption of Coal-Oils, the manufacture of Gas-Pipe, Water-Pipe, Steam-Pipe, Gas Fixtures, Gas-Meters, Water-Meters, Retorts of iron and clay, and their varied apparatus; of Drain Pipes, Ventilating, Heating and Dredging Machines will be increased immeasurably.

THERE ARE 20,000 CITIES AND TOWNS IN THE UNITED STATES, CAPABLE OF SUPPORTING GAS-WORKS, WHILE THERE ARE BUT 400 GAS-WORKS IN [illegible] COUNTRY!!!

column, that a proposition has been made to one of the gas companies of this city to introduce into their works and to test thoroughly the value of the water-gas apparatus, which has been frequently referred to in our columns as having been tried at Wilmington, Delaware, and as being now in use at the Girard House in Philadelphia. Should this proposition be accepted, we are sure that the most rigid investigation will be instituted, and that the most eminent authorities in this specialty will be consulted. Hence the result will doubtless be final, and will prove beyond question the soundness or the futility of the claims set forth. The public will

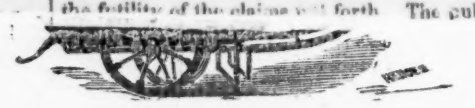
At the present advanced period of the history of gas-lighting, it is not a little surprising to find so much of imperfect information and erroneous theory as are in some quarters prevalent in gas circles. Exploded ideas and effete schemes are not seldom rampant where one would least expect to find them. If in any place the "dangers" proverbially attached to a "little knowledge" afflict their victims more swiftly and more surely than elsewhere, that place is a gas-works. One of the exploded schemes which we have just incidentally referred to is even now not without admirers who would improve gas by introducing tar through a syphon into the retort

HARRIS & BROTHER,

MANUFACTURERS OF EVERY DESCRIPTION OF

GAS-METERS AND GAS-APPARATUS,

No. 1117 Cherry St., Philadelphia.



FOR GAS-WORKS.

FURMAN-ST., Near Fulton Ferry, Brooklyn, N. Y. Lamples are on Exhibition at the ROOMS of THE AMERICAN GAS-LIGHT JOURNAL

water. Made in lengths of nine and twelve feet, of turned and bored joints.

WROUGHT IRON TUBES and all materials for gas and water works, Fire-Bricks, Fire-Clay, Water Hydrants, Scotch and English Canne Coal, &c. Kennedy's Water Meters for measuring the flow of water—indispensable to all water companies.

TO GAS-FITTERS & PLUMBERS.—L. Waefeler & Co., No. 94 Beekman street, New York, have always on hand several hundred kegs WROUGHT-IRON GAS-PIPE HOOKS, of all sizes from ½ to 2 inches. They are made of best quality horse-shoe nail iron, and warranted not to break. Also, PLUMBERS' MATERIALS, such as China Wash-Basins, Closet Basins, Pan-Closets, Bath Tubs, Boilers, Brass and Silver-plated Cocks, Brass and iron Pumps, Hydraulic Rams, French Fountain Jets, &c., all at the very lowest prices.

BUTTS & KENDALL, (Formerly F. Butts & Co.) Dealers in STERLING COAL, Cleveland, Ohio.—The attention of Gas Companies is called to the following letters as to the merits of the above Coal, being a few of the many we have received, and from which we are led to believe that there is no English or American Coal which combines all the qualities desired in a Gas Coal as perfectly as the Sterling:—

Office of the Manhattan Gas Light Co.,
New York, January 13, 1860.

MESSRS. BUTTS & KENDALL:—*Gentlemen*:—Yours of 9th inst. is received. The "Sterling Coal" received from you during the past year worked very satisfactorily—averaging 9620 cubic feet of 15 candle Gas per ton of 2240 lbs., and 41 bushels of Coke, weighing 1465 lbs. We consider it among the best of American Gas Coals, for the quantity and quality of the Gas produced, and also for the excellent quality of its Coke. I am, Gentlemen, your obedient servant, CHARLES ROOME, Pres.

Office of the Rondout and Kingston
Gas Light Co., Rondout, *Jan* 4, 1860.

MESSRS. BUTTS & KENDALL:—*Gentlemen*:—The 600 tons of Sterling Coal ordered from you in August, 1859, has now been in use over four months, to my entire satisfaction. Its average yield is 4, 40-100 feet, and a good strong light. The Coke produced equal in quality and quantity, to best English Coking Coals. It burns very freely with little clinker. In purification it is economical, using no more lime than New Pelton. It is superior to any American Coal I ever used. I shall be pleased to give you any further information at my office in New York.

WM. W. HAGUE, 522 Broadway.

The Cleveland Gas Light and Coke Co.,
Office, 195 *Superior St., Cleveland, Dec.* 30, 1859.

MESSRS. BUTTS & KENDALL:—*Gentlemen*:—This Company has used between 3000 and 4000 tons of your "Sterling Coal," and are still using it with very satisfactory results. We find the average product of a ton of 2000 lbs. is about 8800 feet of Gas and about 37 bushels of Coke. The Gas is of good illuminating power and quite free from sulphur or other impurities, one bushel of lime purifying 9000 feet, and the Coke of very superior quality. The yield of Gas is about the same as from the Pittsburgh Coal, and the Coke better adapted to our use. Yours, truly, T. DWIGHT EELLS, Sec.

Office of the Sandusky, O., Gas Co., *Jan.* 16, 1860

MESSRS. BUTTS & KENDALL:—*Gentlemen*:—This Company has used your Sterling Coal since (July 3d, 1859, and are still continuing the use of it with satisfaction to the Company and consumers. The average product has been 8,629 feet of Gas per ton of 2,000 lbs, and 37 bushels of Coke of very superior quality. The Gas is as good as that obtained from Pittsburgh Coal I consider it the best Coal ever used in our works. I am, gentlemen, yours respectfully, WM HUDSON, Sup't & Sec'y.

We would also refer to Gas Companies in the following places:—New York City (Manhattan and New York Co's), Albany, Troy, West Troy, Rochester, Oswego, Rondout, Kingston, Albion, Brockport, Seneca Falls, Elmira and Lyons, in the State of New York; Cleveland, Toledo, Sandusky, Norwalk and Oberlin, in Ohio; Detroit, Ann Arbor, Grand Rapids and Kalamazoo, in Michigan; Coburg, in Canada, and two Companies in Milwaukie, Wisconsin.

The extensive Mines of the Sterling Coal and Mining Company, in the western part of Pennsylvania (known as the Sterling Hills, and the highest in that part of the State), are wholly under our control, and the Coal is mined and sold only by us or our Agents. The average product of the Sterling Coal, per ton of 2,000 lbs., is 8,733 feet of 15⅓ candle Gas (4, 37-100 per lb.), and 37 bushels of Coke of very superior quality. Getting our Coal to this place by railroad, a supply can be had during the summer months (as well as at all other times), which is not the case with coals dependent upon high water for transportation, as are most or all other gas coals which are sent to the Lake ports for shipment. Our mining facilities are such, that we are prepared to ship extensively. For any further information address the undersigned, or M. BALLARD, Esq., Syracuse, N. Y., who is our Agent for that State.

BUTTS & KENDALL, Cleveland, O.

CORNELIUS & BAKER,

MANUFACTURERS OF

Lamps, Chandeliers, Gas-Fixtures, &c.,

MANUFACTORIES,

821 Cherry-St., and Fifth-St. and Columbia Avenue.

STORE, 710 CHESTNUT STREET,

PHILADELPHIA.

JOHN HEARN & CO., Dealers and Miners in AMERICAN GAS-COALS, Erie, Penn., would call the attention of Gas Companies to the superior quality of our Coals. For the past ten years they have been used by a majority of the Gas Companies in the State of New York, west of Albany and Troy. And also by the Gas Companies in the cities and towns of the North-Western States, and, during the past year, by the East Troy Gas-Light Company, Albany Gas-Light Co., and Manhattan Gas-Light Co. of the city of New-York,—all of which heretofore used English Coals.

Owning our mines and a fleet of vessels on the Lakes, having no Railroad transportation, and only 70 miles of canal from this city, or 140 miles of canal and Lake from Buffalo to the coal fields, being 175 miles less of transportation for Coal to the Seaboard, than any Coal Depot on the Lakes, and having an Agency in Buffalo for the transhipment of our Coals only, it is unnecessary to say that parties purchasing of us, will get their Coal at first hand, saving, thereby, commission to managers and 175 miles of extra railroad and lake transportation.

A working average of our Beaver Coal is 9,500 feet of 16 Candle Gas, and 40 bushels Coal to the ton of 2,240 lbs.

The Manhattan Gas-Light Co of New York having thoroughly tested the Gas Coals of Pennsylvania and Ohio, the following extract from a letter to us will speak for itself:

"MANHATTAN GAS-LIGHT COMPANY,
"New York, June 15th, 1859.

"MESSRS. JOHN HEARN & CO., Erie, Penn.:

"GENTLEMEN,—This Company has a contract with your firm for the delivery of five thousand tons of Gas Coal, half each Beaver and Mount Carbon, at $ —— per ton of 2,240 lbs.

"The cargo which has been received is satisfactory, and as we shall need 15 or 20 thousand tons more, to be delivered through the present summer, we beg you to advise us whether you desire to increase your contract. We have applications from various parties who desire to supply the Company, but shall be satisfied to get a larger quantity of your Coals, provided you can serve us on terms equally favorable with others.

"For the Gas Co.,
"HENRY YOUNG."

We are prepared to contract for the delivery of our Coals in the City of New York, or the cities and towns on the Hudson River.

CANNEL AND ORREL GAS-Coal.—The Subscribers are constantly receiving direct, from the celebrated mines of WILLIAM H. BRANKER & CO., NEWCASTLE, ENG., COAL of the very first quality for gas purposes, which they will sell direct from ship or from yard at the lowest market price; and we guarantee the coal to be equal if not superior to any other coal brought to this market.

CORNELIUS BAKER & SON,
61 Leonard st. and 652 Hudson st., New York.

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ble, as the most copious flow is found at about fifty feet from the surface, and the rock is so easily penetrated that a well may generally be sunk to that depth within a week, and at a cost of fifty dollars. To fit it for the reception of a pump something more is necessary, but the entire expense is comparatively small. The most promising surface-indications are found within a limited area, which will probably become the scene of as much excitement and the theatre of as striking mutations of fortune as the busy, grimy, populous region of Oil Creek, in Pennsylvania. Already the influx of adventurers is considerable, and without doubt the sober habits of [illegible] will be modified as the popu-

water-gas advocates a fair chance here. They deserve it. Messrs. Appleton & Graham, of Boston, Mass., the well-known manufacturers of portable gas apparatus, have secured the agency of the water-gas for New England, and will proceed to erect works on that principle in one of the villages near Boston at once. This is the only way to prove its practical advantages, and they are now, for the first time, about to be ascertained.

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Such of our readers as are interested in the manufacture or consumption of coal-oils, will be gratified to learn that a lamp, to burn Kerosene and other hydrocarbon oils, without a chimney, and free from the objec[illegible]

liquor obtained from the gas works and mixed with an equal portion of water. The difference was seen in a short time—the grass was of a lively dark green, and was considerably higher and thicker than the other parts of the field; indeed, the difference in appearance was so great that many persons came to me to inquire as to the cause. The crop of hay was full twice as much as from that part of the field where it was not applied. Since that time I have used ammoniacal liquor on the whole of my farm."

An experiment by J. M. Tylden. "I selected two perches of similar adjoining land. It had a good crop of mangel wurzel upon it the previous autumn. No. 1 was manured with half of the following compost; one gallon ammoniacal gas liquor, half a bushel sawdust, coal ashes and gypsum sufficient to fix the ammonia, half a pint of gas tar, one pound Nitrate of soda, and four barrow loads of rubbish, turf and weeds. In about three weeks the gas liquor had decomposed this mass; half of

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the merits of the above Coal, being a few of the many we have received, and from which we are led to believe that there is no English or American Coal which combines all the qualities desired in a Gas Coal as perfectly as the Sterling:—

Office of the Manhattan Gas Light Co.,
New York, January 13, 1860.

MESSRS. BUTTS & KENDALL:—*Gentlemen*:—Yours 9th inst. is received. The "Sterling Coal" received from you during the past year worked very satisfactorily—averaging 9520 cubic feet of 16 candle Gas per ton of 2240 lbs, and 41 bushels of Coke, weighing 1465 lbs. We consider it among the best of American Gas Coals, for the quantity and quality of the Gas produced, and also for the excellent quality of its Coke. I am, Gentlemen, your obedient servant, CHARLES ROOME, Pres.

Office of the Rondout and Kingston
Gas Light Co., Rondout, *Jan* 4, 1860.

MESSRS. BUTTS & KENDALL:—*Gentlemen*:—The 600 tons of Sterling Coal ordered from you in August, 1859, has now been in use over four months, to my entire satisfaction. Its average yield is 4, 40-100 feet, and a good strong light. The Coke produced equal in quality and quantity, to best English Coking Coals. It burns very freely with little clinker. In purification it is economical, using no more lime than New Pelton. It is superior to any American Coal I ever used. I shall be pleased to give you any further information at my office in New York.

WM. W. HAGUE, 522 Broadway.

The Cleveland Gas Light and Coke Co.,
Office, 195 *Superior-St., Cleveland, Dec.* 30, 1859.

MESSRS. BUTTS & KENDALL:—*Gentlemen*:—This Company has used between 3000 and 4000 tons of your "Sterling Coal," and are still using it with very satisfactory results. We find the average product of a ton of 2000 lbs. is about 8800 feet of Gas and about 37 bushels of Coke. The Gas is of good illuminating power and quite free from sulphur or other impurities, one bushel of lime purifying 9000 feet, and the Coke of very superior quality. The yield of Gas is about the same as from the Pittsburgh Coal, and the Coke better adapted to our use. Yours, truly, T. DWIGHT ELLS, Sec.

Office of the Sandusky, O., Gas Co., *Jan.* 16, 1860

MESSRS. BUTTS & KENDALL:—*Gentlemen*:—This Company has used your Sterling Coal since (July 3d, 1859, and are still continuing the use of it with satisfaction to the Company and consumers. The average product has been 8,629 feet of Gas per ton of 2,000 lbs, and 37 bushels of Coke of very superior quality. The Gas is as good as that obtained from Pittsburgh Coal. I consider it the best Coal ever used in our works. I am, gentlemen, yours respectfully, WM. HUDSON, Sup't & Sec'y.

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The extensive Mines of the Sterling Coal and Mining Company, in the western part of Pennsylvania (known as the Sterling Hills, and the highest in that part of the State), are wholly under our control, and the Coal is mined and sold only by us or our Agents. The average product of the Sterling Coal, per ton of 2,000 lbs., is 8,733 feet of 15¼ candle Gas (4, 37-100 per lb.), and 37 bushels of Coke of very superior quality. Getting our Coal to this place by railroad, a supply can be had during the summer months (as well as at all other times), which is not the case with coals dependent upon high water for transportation, as are most or all other gas coals which are sent to the Lake ports for shipment. Our mining facilities are such, that we are prepared to ship extensively. For any further information address the undersigned, or M. BALLARD, Esq., Syracuse, N. Y., who is our Agent for that State.

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"New York, June 15th, 1859.

"Messrs. JOHN HEARN & Co., Erie, Penn.:

"GENTLEMEN,—This Company has a contract with your firm for the delivery of five thousand tons of Gas Coal, half each Beaver and Mount Carbon, at $ —— per ton of 2,240 lbs.

"The cargo which has been received is satisfactory, and as we shall need 15 or 20 thousand tons more, to be delivered through the present summer, we beg you to advise us whether you desire to increase your contract. We have applications from various parties who desire to supply the Company, but shall be satisfied to get a larger quantity of your Coals, provided you can serve us on terms equally favorable with others.

"For the Gas Co.,
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WILLIAM RYDER,
General Mineral and Metal Agent and Merchant, 4 Dean street, NEWCASTLE-ON-TYNE, England, is prepared to supply Gas Companies and others with every variety of appliance for the production and supply of Gas, including GASOMETERS, RETORTS (metal and clay), FIRE BRICKS, COALS, METAL MAINS, TUBES, in wrought iron, copper, brass, lead or composition, METERS, TAPS, FITTINGS, &c., &c.; and from his extensive experience in this class of work, can guarantee every thing of the best description.

JOHN ROGERSON & CO., NEWCASTLE ON-TYNE, Middlesbro'-on-Tees, London, supply Gas Coal, Clay Retorts, Cast Iron Pipes and Retorts, Gasometers, &c. A partner of the above house being now in this city, will be glad to wait upon any gas company requiring supplies. Agents, MEAD & BELL,
17 William street, New York.

COWEN'S PATENT FIRE-CLAY Retorts.
JOSEPH COWEN & Co., Blaydon Burn, near Newcastle-on-Tyne, England, were the only parties to whom a Prize Medal was awarded at the Great Exhibition in London, of 1851, for "GAS RETORTS AND OTHER OBJECTS IN FIRE CLAY."
J. C. & Co. have been for many years the most extensive manufacturers of Fire Clay Retorts in the United Kingdom; and orders for FIRE CLAY RETORTS of all shapes and dimensions, FIRE BRICKS, and every other article in Fire Clay, are promptly executed at their works as above.
COWEN'S GARESFIELD COAL AND COKE.
Coal and Coke office,
QUAY SIDE, NEWCASTLE ON-TYNE.

NEW YORK FIRE-BRICK Manufactory. (Branch Works at Kreischerville, Staten Island.)
B. KREISCHER & CO, office 56 Goerck street, corner Delancy street, New York.
GAS-HOUSE TILES and FIRE BRICK of all shapes and sizes. FIRE MORTAR, CLAY, and SAND articles of every description made to order at the shortest notice. B. KREISCHER, M MAURER, A. WEBER

PATENT PYRO-CLAY GAS RETORTS. THOMAS HOADLEY, Patentee, wishes to call the attention of Gas-engineers to these Retorts, as a very superior article.
REFERENCES:—Gas-Light Works, Buffalo, N. Y.
" " Cleveland, O.
" " Chicago, Ill.
THOS. HOADLEY, 34 Front st., Cleveland, O.

CELLULAR GAS RETORTS. C. M. CRESSON'S CELLULAR GAS Retorts, Patented October 3d, 1854. Adapted to the manufacture of GAS from Rosin, Coal, Wood, &c., and now in use at the Philadelphia Gas Works. Patent Rights for sale. For information apply to HENRY S. HAGERT, Attorney for Patentee, S. E. cor of Walnut and Sixth streets, Philadelphia, Pa.

GAUTIER'S CLAY RETORTS.—Fire and Arch Bricks, Gas-House Tiles, &c. Black Lead Crucibles for Steel Works and Brass Founders.
MANY, BALDWIN & MANY, 49 John-st., N. Y.

ENGLISH FIRE BRICKS, Rufford's Stourbridge Bricks, Stourbridge and Welsh Clay.
E. THOMPSON'S Neph., IMP'R, 45 Gold-s

ELLIMAN BROTHERS, 217 Pearl-St., New York, Commission Merchants, Importers of
BELGIAN FIRE-CLAY GAS RETORTS,
Dealers in Tiles, Arch-Bricks, Furnace-Doors, Mouth-Pieces, Covers, and all other Fittings, of the most approved patterns, for setting Clay Retorts. Sabbaton's Patent Furnace-Doors and Frames, Floyd's Patent Malleable Iron Retort Covers, McKenzie's Patent Gas Exhausters, made by Addison Smith, Compensator Valves, &c. Gas, Water, and Steam Tubes.

CLAY RETORTS.—J. K. BRICK & Co.—Brooklyn Clay Retort and Fire-Brick Works, Van Dyke, near Van Brunt street, Brooklyn, N. Y.—Manufacturers of Clay Retorts, Fire Brick, Gas and Hot House Tiles, Arch, Furnace and Cupola Brick, Fire Cement, Mortar, &c.
J. K. B. & Co. would invite the attention of Gas Companies to the important fact, that the Clay Retorts manufactured at their Works can be set without Tiles, requiring to be supported only at the front and rear ends, thereby exposing the entire surface of the Retort to the direct action of the flame from the furnace.
The results of this mode of setting, are a Saving of Fuel, Tiles, Transportation of Materials, Labor and Space, thereby enabling Gas Companies to set Retorts of at least 50 per cent. greater capacity than those usually employed in the ordinary arches.

JOHN NEWKUMET, Philadelphia Fire-Brick Works, Vine and Twenty-third Streets, Philadelphia.
Manufacturer of all kinds of FIRE-BRICK, GAS-HOUSE TILES, to suit all the different plans in use. Clay Retorts and Dentists' Muffles. Orders filled at short notice.

FOR SYMMES' PATENT RETORTS, Mouthpieces, &c. address—
ELLIMAN BROTHERS, 217 Pearl-st., New York.
MORRIS, TASKER & CO, Philadelphia.
HORATIO EAGLE, 254 Canal-St., New York.
Or H. K. SYMMES, Newton, MASS.
See Engravings in AMERICAN GAS-LIGHT JOURNAL for July 1, 1860, page 280.

KENNEDY'S Method of Securing Iron Mouth-Pieces to Clay Retorts.—The Retort is made in the usual form, but without any bolt-holes through the flange. An iron collar made in two pieces, is then placed around the Retort behind the flange, and bolted to the mouth-piece by bolts which pass just outside of the flange instead of passing through it. As each Retort costs about $30, and as the breaking out of the bolt-holes entirely ruins the whole Retort, the importance of this simple but valuable improvement will be readily appreciated.
By this improvement the mouth-piece is firmly attached to Clay Retorts in a simple and very substantial manner, the bolts passing from the yoke to the mouth-piece on the outside of the Retort. The yokes are furnished at a low price, ready to be put on. For Engravings, see AMERICAN GAS-LIGHT JOURNAL for June, 1860, page 245. Address the Patentee,
JOHN P. KENNEDY, Trenton, N. J.

THE AUBIN GAS-WORKS CO., No. 44 State street, Albany, N. Y., will refer parties wanting GAS-WORKS FOR VILLAGES to seventeen of their Village Works now in operation in the United States and the Canadas in *every one of which the profits of the company are ten per cent. and upwards, and yet good gas is furnished.* Agents wanted to extend the sale of the AUBIN PORTABLE GAS STOVE for dwellings, factories, &c., which will make 1000 feet of gas in five hours, and with greater simplicity, safety and economy, than any other known apparatus.

RICHARDSON, BOYNTON & CO.
MANUFACTURERS AND DEALERS in Boynton's Furnaces, Bullard's, Steam Heaters, Morning Star, and Pierce Ranges, Stoves, &c., No. 260 Canal street, a few doors east of Broadway, New York.
H. A. RICHARDSON. N. A. BOYNTON. J. A. DURKEE.

Cast Iron Street Lanterns, neat and very durable.
For sale by JOHN JEFFREY, Cincinnati, Ohio.
Street Lanterns cast in three pieces, which are fitted together without bolts, rivets, solder or other fastenings; glazed without tins, putty, or catches; the glass slipping into grooves cast in the lantern. These lanterns have been adopted, and are now used, by the City Councils of Cincinnati, O., Covington, Ky., and other cities.

STUART & PETERSON, Willow street, above Thirteenth, Philadelphia, Manufacturers of LAMP POSTS and CAST IRON STREET-LANTERNS.
P. S.—Our Cast Iron Lanterns are warranted to out last three Tin Lanterns.

STEPHEN SCAMMON, Gas Engineer and Contractor for the erection of Gas-Works; also, dealer in CAST and WROUGHT IRON PIPE for Steam, Water and Gas, No. 561 Broadway, New York.

A. BRONSON, Pattern and Model Designer and Maker having had twenty-five years' experience, will assist and perfect inventions and designs. PATTERNS and MODELS made of WOOD, IRON, or BRASS (secretly, if desired,) on short notice.
N. B.—Stove and machine patterns of every description, made with elegance and precision.
Metallic letters for patterns always on hand.
No 102 Elm st., cor. Walker st. New York.

R. D. WOOD & CO., Manufacturers of Cast Iron, Gas and WATER PIPE; RETORTS, LAMP-POSTS, &c. S. W. corner 4th and Chesnut streets, Philadelphia. Works at Millville, N. J.

LANE & ANNIN, 88 JOHN-St. and 23 Gold-st., New York, Manufacturers of Steam, Water and Gas Fittings for Iron Pipe.
Wrought Iron Pipe for Sale.
Jobbing promptly attended to.
ANTHONY LANE,
JOSEPH ANNIN.

BERGEN IRON WORKS. Established 1833.
R. A. BRICK, Manufacturer of CAST-IRON WATER and GAS PIPES. RETORTS, PIPES, &c., always on hand, Office 109, Leonard street, New York.

GREENE ST. IRON FOUNDRY and Machine Shop, 37 to 43 Greene street, (Office, No. 39) near Grand, New York.
Cast Iron Soil and Drain Pipe, Tees, Bends, &c.
A. &. E. B. BRADY.

WEST TROY, (N. Y.,) IRON FOUNDRY.
AUGUSTUS VIELE, Manufacturer of Gas and Water Pipes of all sizes. DRIPS, SYPHONS, BENDS, AND BRANCHES. The manufactures of this establishment are in use in various Gas and Water Works throughout the country.
Address AUGUSTUS VIELE, West Troy, N. Y.

HOPE IRON FOUNDRY, PROVIDENCE, R. I.
Gas-Work Castings of every description.
They would call attention to their superior IRON RETORTS, which are extenivsely used with good satisfaction; also to E. WALCOTT'S PATENT MOUTH and LID, possessing important advantages over any other in use, and are shown in a circular which can be obtained by addressing—
JOS. P. MANTON, Agt.

EXCELSIOR IRON WORKS.—GEORGE R. JACKSON & Co., (Successors to Cornell & Jackson,) 201 Centre street, cor. of Howard, New York.—Fire-Proof Doors, Vaults, Safes and Shutters, Enameled Grates and Fenders, Iron Railings, for Public Buildings, Dwellings, Balconies, Verandahs, Stair-cases, Parks and Tombs, Prismatic Platforms and Vault Lights, Columns, Girders, and all kinds of Castings for Building purposes.
☞ Casting for the Trade.

OREGON FOUNDRY, Nos. 740, 742, 744 Greenwich street, New York.
HERRING & FLOYD, proprietors, manufacture Gas Compensators of all sizes, Self-Acting Valves, Exhausters upon an improved plan, costing less than half those of English manufacture, also castings of every description for Gas and Water Works.
Herring & Floyd offer for sale Sabbaton's Patent Screening Shovels for coke and coals, made of malleable iron, of all sizes; Sabbaton's Patent Improved Cast Iron Furnace Frame and Door, arranged to protect the iron work of the door and frame from direct contact with the fire; also Floyd's Patent Malleable Iron Retort Covers, only quarter of an inch thick, but of convex form, and of great strength, as is attested by certificates from several of the leading Gas-works in America. For engravings of all the above patents see AMERICAN GAS LIGHT JOURNAL for October, 1859, pages 65 and 71.
Samples of the above castings can be seen at the Rooms of the AMERICAN GAS-LIGHT JOURNAL.

S. V. MERRICK, J. VAUGHAN MERRICK,
W. H. MERRICK.
SOUTHWARK FOUNDRY, Philadelphia.
MERRICK & SONS, Engineers, manufacturers of every description of Gas Machinery.
Retorts, Bench Castings, Condensers, Washers, Scrubbers, Wet or Dry Lime Purifiers, Coke Wagons, Fire Tools, Wrought Iron Grate Bars, Gasholders, either TELESCOPIC OR SINGLE, WITH SUSPENSION FRAMES COMPLETE; Wrought Iron Roof Frames, for Iron or Slate; Stop Cocks, Exhausters, Steam Pumps, Boilers and Tanks, Steam or Hand Air Pumps for proving Street Mains, Centre Seals, Governors, Wrought or Cast-Iron Lime Sieves for Purifiers, Purifier Hoisting Machines, &c., &c.
Address— MERRICK & SONS,
5th and Washington Streets, Philadelphia.

HUNTER, KELLER & CO., Manufacturers of
WROUGHT-IRON PIPES, AND FIXTURES
of all descriptions, for
STEAM, WATER AND GAS,
144 Centre street, New York.

TRANER & MERCER, 117 North Water street, and 124 North wharves, Philadelphia, AGENTS FOR FLORENCE & MERCER FOUNDRIES, ELK STREE IRON WORKS.
CAST IRON STREET MAINS; *Bends, Branches, Chemical Retorts, and all kinds of Castings for* GAS-WORKS, either COAL or ROSIN WORKS. SHEET IRON FOR GASOMETERS *cut and punched to order.* BOILER IRON *of all descriptions.* RUSSIA SHEET IRON, TIN PLATES, BLOCK TIN, COPPER, PIG LEAD, SPELTER, and Metals generally.

GEORGE W. KRAFT, GASOMETER and Boiler-maker, Chestnut st. wharf, West Philadelphia, manufactures Gasometers, Retort House Roofs, Water Tanks Purifying Boxes, Coal Cars, Coke Barrows, and all kinds of Wrought Iron Work for Bridges, Buildings, &c.
Particular attention paid to Alterations and Repairs.
REFERENCES:
John C. Cresson, Engineer Gas Works, Philadelphia; Joseph A. Sabbaton, Engineer Manhattan Gas Works, New York; Col. W. S. Campbell, Engineer Gas Works New Orleans; P. A. Sabbaton, Engineer Gas Works, Albany; Waterhouse and Bowes, Gas Engineers, Raleigh, N. C.; Joseph Battin, Newark, N. J.; C. B. Dungan, Philadela.

GIRARD TUBE WORKS. MURPHY & ALLISON, Proprietors. Wrought Iron Coke-Welded Tubes, for Gas, Water, Steam, &c. Wrought, Cast and Malleable Iron Fittings, Steam and Gas Cocks, Valves. Also, Galvanized Tubes and Fittings.
Office 1908 Market street, Philadelphia.

MORRIS, TASKER & CO., PASCAL IRON WORKS,
[ESTABLISHED 1821]
PHILADELPHIA, manufacture Wrought Iron Welded Tubes for Gas, Steam or Water; Lap Welded Boiler Flues,
GALVANIZED WROUGHT IRON TUBES,
ARTESIAN WELL PIPES,
of Wrought or Cast Iron, screwed together, flush inside and out; Gas-works Castings, Retorts and Bench Castings for Coal gas works; Cast Iron Street Mains, Bends, Branches, Drips, &c.
GAS AND STEAM FITTERS' TOOLS, &c.
STEPHEN MORRIS, CHAS. WHEELER,
THOMAS S. TASKER, STEPHEN P. M. TASKER.

CAST IRON WATER, GAS, DRAIN, AND HEATER PIPES, &c.,
COLUMBIAN IRON WORKS,
OFFICE, No. 46 NORTH SEVENTH STREET,
Below Arch street, Philadelphia.
THOS. M. ADAMS, Proprietor.

J. B. BROWN & CO., Iron Founders, adjoining Railroad Depot, Peekskill, N. Y. Manufacturers of the U. S. Lamp-post Mail Boxes. Castings of every description, hard and soft, delivered in New York city. J. B. B. and Co. manufacture all the celebrated Peekskill plows, also a new line of excellent iron-beam Plows. Gin-gearing, Road-scrapers, Agricultural machinery.
Attention paid to getting up patterns.

COLWELL & CO., Manufacturers of Pig Iron and Cast Iron Gas and Water Pipes, No. 207 North Water street and 206 North Wharves, Philadelphia.
STEPHEN COLWELL, W. DWIGHT BELL,
THEO. TREWENDT, SAMUEL FULTON.

TO GAS AND WATER COMPANIES:
The undersigned, Agent for Messrs. Thomas Edington & Sons, Phenix Foundry, Glasgow, Scotland, Is prepared to contract for all descriptions of Cast-iron Pipes of their manufacture.
About 6000 tons of these Pipes have lately been supplied to the Brooklyn Water-works, N. Y., and the Chief Engineer of the Works, A. P. Kirkwood, Esq., is ready to testify to their excellent quality.
ARCHIBALD BAXTER,
90 Broad st, New York,
Sole Agent For the United States and Canada

HENRY G. NICHOLS, 24 Pine Street, up stairs, Room No. 5, New York. Manufacturers' Agent for the Sale of Cast Iron Pipe, Bends and Branches for Gas or Water, Retorts, Lamp-Posts, Lanterns for Gas Lamp-Posts.

NORRIS & GREGG,
DEALERS IN WROUGHT IRON Pipe, and Manufacturers of Fittings for Steam, Gas, and Water, Nos. 62 and 64 Gold street, (between Beekman and Fulton streets,) New York.
THOMAS H. NORRIS. CHARLES GREGG.

PIPE, PIPE, PIPE, PIPE, PIPE. —Plumbers, and all others who use Cast Iron Drain Pipe, will do well to call at the Pipe Foundry, 39 Greene street. A large lot of Five and Six Inch, Seven Foot length, on hand, and for sale low. A. & E. B. BRADY.

WATERHOUSE & BOWES, Builders of Gas-Works, Raleigh, N. C.—Gas-Works erected in any part of the United States.
REFERENCES.

J. H. Carson,	Pres't,	Charlotte, N. C.	Gas-W'ks.
D. G. Fowle,	do.	Raleigh do.	do.
J. C Smythe,	do.	Salisbury do.	do
Arch. McClean,	do.	Fayetteville do.	do.
Jos. A. Waddell,	do.	Staunton Va.	do.
A. G. Story,	do.	Little Falls N. Y.	do.
G. H. Young,	Prop'r	Waverley Miss.	do.

Wm. Johnston, President of Charlotte & S. C. R. R., Charlotte, N. C., A. B. Wood, Agent Reading Iron Works, 57 Maiden lane, N. Y., Cornelius & Baker Manufacturers of Gas-fixtures, Philadelphia.
G. B. WATERHOUSE. M. BOWES.

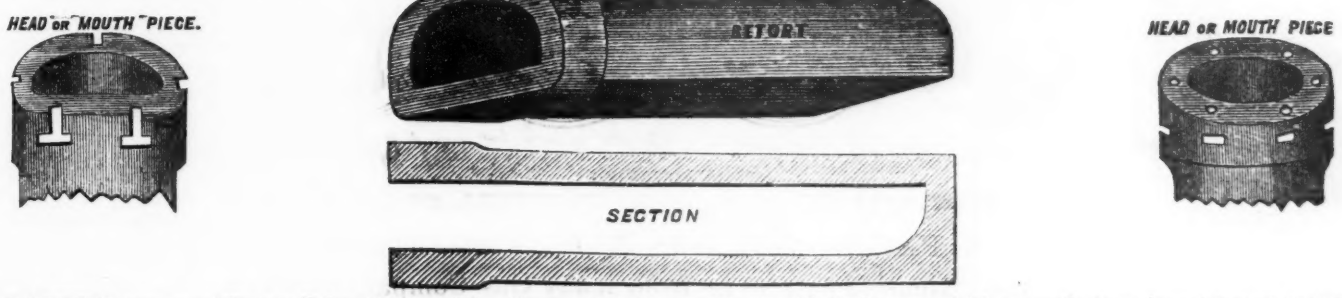
BENJAMIN PIKE & SONS, Opticians, Importers and Manufacturers of Mathematical and Philosophical Instruments, No. 518 Broadway, (opposite St. Nicholas Hotel), New York.
Gold, Silver and Steel Spectacles; Barometers, Thermometers, Surveying Compasses, Theodolites, Levelling Instruments, Opera Glasses, Telescopes and Microscopes; Air Pumps and Electrical Machines. Instruments and Spectacles repaired. Periscopic Glasses and Pebbles.
DANIEL PIKE. GARDINER PIKE.

PORTABLE GAS WORKS.—S. T. McDOUGALL'S PATENT Portable Gas Works, for making Gas from Rosin, Rosin Oil, Coal Oil, Naptha, Grease, etc. These Works combine the latest improvements in gas making, and are guaranteed to be superior to any in market. They are made of all sizes, suitable for either country or city use. No county house is complete without its Gas Works. Gas Stoves of every description on hand and made to order. For sale by S. T. McDougall, 170 Center Street, New York.
Agents wanted in other cities to sell rights or machines.

GAS-LIGHT STOCKS FOR SALE. THREE HUNDRED THOUSAND DOLLARS of Stocks in various Gas-light Companies in the United States, paying from 6 to 12 per cent. dividend, for sale by JOHN R. MURRAY, Rooms of the AMERICAN GAS-LIGHT JOURNAL, N. Y

KING BROTHERS,

STOURBRIDGE, ENGLAND, FIRE-BRICK AND RETORT WORKS.



KING BROTHERS beg especially to call the attention of Gas Companies to the superiority of their Retorts, which are made from the celebrated STOURBRIDGE FIRE-CLAY. Mr. King has patented a Kiln for Burning Retorts, by which Patent all Cold Air is excluded from the Kiln while burning, thus rendering them

FREE FROM CRACKS AND CORRECT IN FORM.

By great care in Manufacturing, combined with the advantages in burning, a VERY SMOOTH SURFACE is obtained, rendering them less liable to carbonize

RETORT OVENS, FIRE-BRICKS, GUARDS, SADDLES, RABBITTED BURS, FLUES, AND QUARRIES, ARE ALL MANUFACTURED OF THE SAME QUALITY OF CLAY.

EVERY RETORT AND BRICK IS BRANDED "KING BROTHERS, STOURBRIDGE."

GEORGE WRIGHT & CO.'S

LIVERPOOL AND NEWCASTLE CANNEL AND COAL

FOR GAS MANUFACTURE AND HOUSE USE.

THE undersigned does not submit for comparison the result of chemical analysis, as this plan is too often adopted to promote the sale of inferior or worthless coals that in practice bear no particle of resemblance to their theoretical, and sometimes distorted descriptions.

He is authorized, however, to guarantee the *careful shipment of the best qualities of Cannel and Coal, at the lowest rates of Invoice and Freight offered at time of engagement;* and any losses sustained by short weight, or the neglect of the conditions mentioned, will be promptly and cheerfully repaired.

OFFICE OF THE MANHATTAN GAS-LIGHT COMPANY,
New-York, October 8th, 1859.

Messrs. GEORGE WRIGHT & Co., Liverpool:

Gentlemen,—For many years you have acted as agents for this company, purchasing for, and forwarding to them, coals, retorts, and other gas apparatus.

Your experience, ability and sterling integrity, entitle you to and have secured our confidence, and we cheerfully recommend your house to all gas companies desiring the services of an agent in England. My own personal knowledge of the superior quality of the coals within your control, and my acquaintance with the manufacturers of such articles as can be advantageously procured by you in England for gas companies abroad, added to my high regard for you personally, induce me to write this letter, and express the hope that you may be able to extend your business in this country, not only for your own advantage, but also for the benefit of those who may confide in you as securely as we have done.

I am, gentlemen, your very obedient servant,

CHARLES ROOME, *President.*

T. W. PARMELE, Agent,
No. 4 Irving Place, New-York,

GAS-EXHAUSTERS,

GOVERNORS, FURNACE DOORS,
RETORT-COVERS, CASTINGS,
IMPLEMENTS,
PHOTOMETRICAL AND METER-PROVING APPARATUS.

HARRIS & PEARSON,

PROPRIETORS OF

BEST GLASS-HOUSE POT, AND CRUCIBLE CLAY.

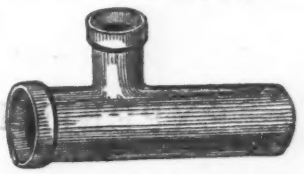
Manufacturers of Fire-Bricks, Gas-Retorts, and Glass-House Furnace-Bricks of every description.

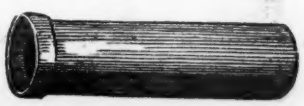
TAMBLECOTE FIRE-CLAY AND BRICK WORKS, STOURBRIDGE, ENGLAND.

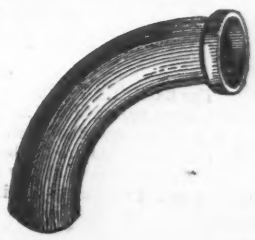
GAS, STEAM, SMOKE, PURE WATER AND SOIL PIPE,

CLAY RETORTS, TILES, BRICKS,

AND EVERY VARIETY OF FIRE GOODS.







JOSEPH CLIFF,

WORTLEY FIRE-BRICK WORKS,

Near Leeds, England.

T. W. PARMELE, Agent, No. 4 Irving Place, New York.

MEDALS AWARDED TO THOMAS GLOVER'S PATENT DRY GAS-METERS

MANUFACTORIES

SUFFOLK ST. CLERKENWELL GREEN. & ALLEN ST. GOSWELL ST. LONDON

THOMAS GLOVER introduced his PATENT DRY GAS METERS into the United States and Canadas in 1846, and since that time he has received extensive patronage from many Gas Companies of those countries as well as from this. Thomas Glover confines his sole attention to the business of Gas-Meter making. The propriety of his doing so is satisfactorily proved by his success. For example: one London Company has now in use above 12,500 of his Patent Dry Gas-Meters, and some of these Meters have been fixed for fourteen years and are still in working order, without complaint from either the company or the consumer.

THOMAS GLOVER thinks it necessary to put Gas Companies on their guard against parties selling Patent Dry Gas-Meters constructed in imitation of his, but unskilfully made on erroneous principles, and with improper and unsuitable materials.

THOMAS GLOVER'S Workshops are now the most extensive in this or any other country, and he is thereby enabled promptly to execute orders to any extent required. Purchasers may, at any time, inspect his Works and the materials of which his Meters are constructed.

Suffolk Street, Clerkenwell, London, and 1 Barrett Street, Fulton Street, Boston.

SAMUEL DOWN,

Nos. 340, 342, 344 and 346 West Twenty-second Street, North River, NEW YORK CITY,

MANUFACTURER OF

WET AND DRY PATENT GAS METERS,

Pressure-Registers, Pressure-Indicators and Gauges, Station, Show, Customer, and Experimental Gas-Meters, Centre or Hydraulic Valves Governors, Compensators for Exhausters, and the Standard Testing Gas-Holders* for Proving Meters, now used in the State of New York in compliance with an Act of the Legislature. Also, Bunsen's Photometer, with complete Apparatus for working the same.

*The standard of measurement of this Gas Holder is given by Professors TORREY, of the U. S. Assay Office; JOY, of Columbia College; GIBBS, of the Free Academy and several other distinguished scientific gentlemen.

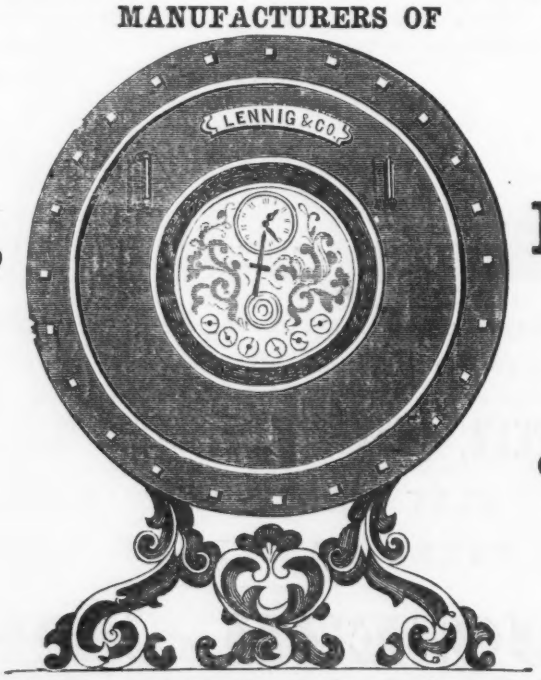
JOSEPH LENNIG & CO.,

Nos. 313 and 315 NEW MARKET STREET, above Vine Street,

PHILADELPHIA, PENN.,

MANUFACTURERS OF

WET AND DRY PATENT **GAS-METERS,** STATION, SHOW, CUSTOMER, AND EXPERIMENTAL **METERS,**



PHOTOMETERS, PRESSURE REGISTERS, **INDICATORS,** AND GUAGES, **GOVERNORS, METER PROVERS,** CENTRE SEALS, FLUID GUAGES, &c.

The flattering Testimonials we are receiving from Gas Officers, accompanied with expressions of such general satisfaction, and the fact of a tried experience for fourteen years, must present itself as a security to parties desirous of securing the most reliable Instruments. We therefore recommend our Patent Dry Gas-Meter, believing it superior to any Meter manufactured. Messrs. J. LENNIG & Co. confine their sole attention to the business of GAS-METER making.

Our materials are the best in use; the strictest attention is given to workmanship, and we guarantee entire satisfaction to all purchasers.

Purchasers may at any time inspect our Works, and the materials of which our Meters are manufactured. We are fully prepared to execute all orders, upon the shortest notice, and it will be to the interest of parties to call upon us.

☞ **Each Meter Tested Separately by a Sworn Inspector, and Sealed when desired.** ☜

METERS REPAIRED AND FORWARDED WITH DISPATCH.

BENCH OF SEVEN GAS-RETORTS.

Fig. 1.

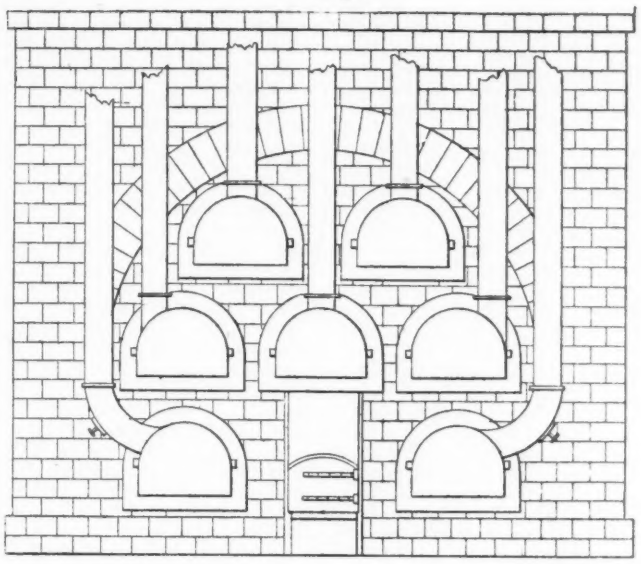


Fig. 2.

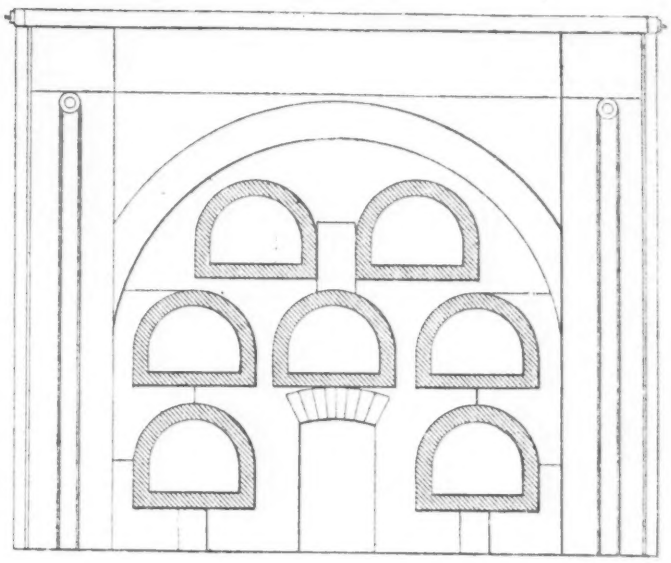


Fig. 3.

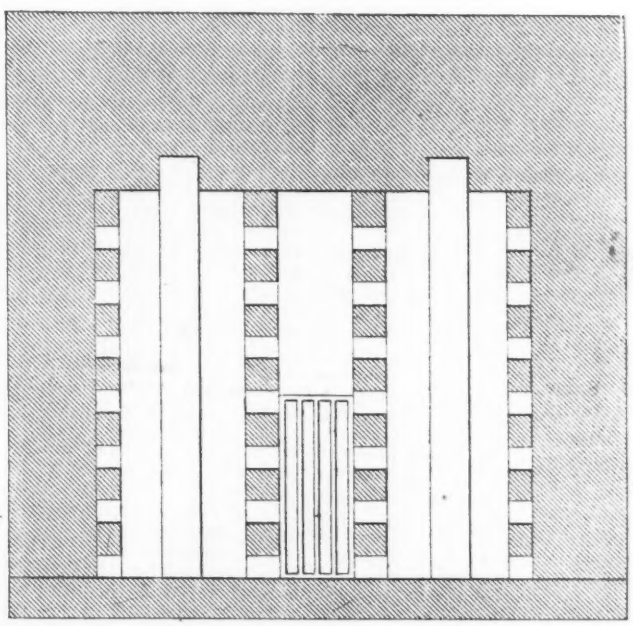


Fig. 4.

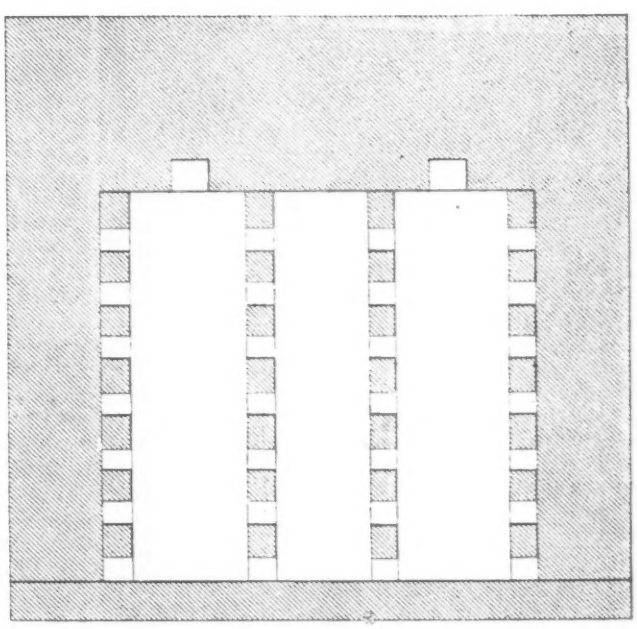


Fig. 5.

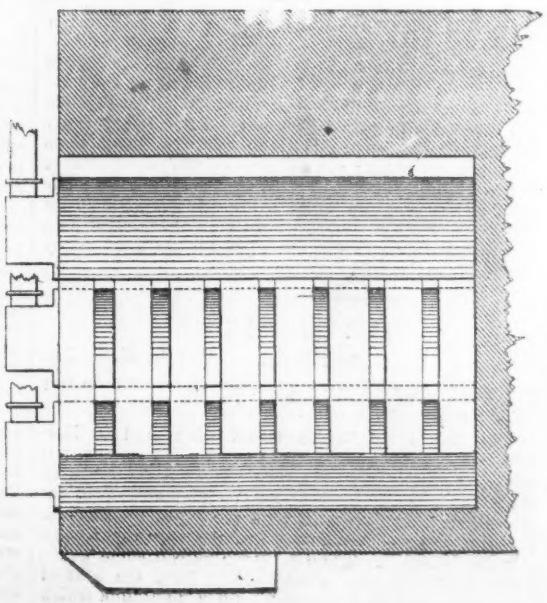
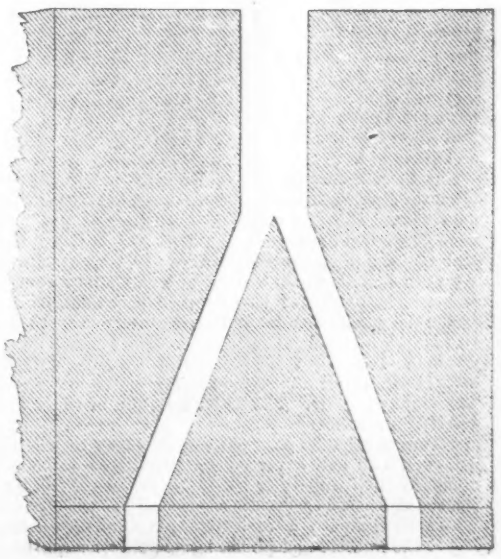


Fig. 6.



Foremost among the subjects which claim the attention of gas-engineers, is the most economical method of constructing and arranging the retorts in which coal is distilled. The quantity of rich illuminating gas which can be obtained in a specified time, from any given quantity of coal, the consumption of fuel required, the preservation of the retorts from deterioration and the maintaining the gaseous products as far as possible of a uniform quality are important points, and can only be attained by adoption of all those improvements which the study of the scientific principles involved may suggest to the intelligent observer. The modes of setting retorts differ as well as their form, size and material.

In France, benches of 7 retorts are at present most commonly in use. We therefore think it may be interesting to our readers to see the annexed engraving of a bench whose product was very abundant and satisfactory. The drawings have been made on a scale of $\frac{1}{8}$ inch to the foot. We are indebted to the editor of *Le Journal de l'Eclairage au Gaz*, for the electrotypes, and present them to the companies of the Western Continent, as being interesting to them in common with those of Europe.

THE NEW-YORK GAS-LIGHT CONTROVERSY.

In the public mind, at this moment, there exists, regarding gas affairs, no small dissatisfaction. There is, for instance, a lack of confidence in the meters. Justly or unjustly, the accuracy of these registering contrivances is questioned. Now, as it is evidently the interest and the duty of any manufacturer to be on the best possible terms with his customers, we would suggest to the companies the propriety of adopting a prompt method of dealing with this species of complaint. If a discrepancy occur between the meter register and the consumer's well-supported estimate of what it should be, instead of assuming that the register cannot err, or the gas account be wrong, let the company show a ready willingness to verify the meter's accuracy. The law provides for such cases, and points out this remedy. The meter is directed to be proved and tested. If the ordinary method of taking out the meter be too expensive or troublesome, a standard meter might, perhaps, be introduced alongside the house meter, so that when a given quantity of gas has passed through both, the register of the suspected instrument could be compared with that attested by the State Inspector. And as some consumers on the one hand, complain that the companies furnish meters purposely made to register against the consumer, while, on the other hand, the companies complain that the fault is oftener the other way, and the meters record less and not more than the truth, let either party exercise the right the law gives, of instituting a satisfactory test. Usually, we believe, the companies have paid the expenses of all such trials, whether the result has been for or against them, and, unless in vexatious and exceptional cases, it should be so. The practical difficulties of some satisfactory method of removing doubts, and establishing, beyond question, the truthfulness of our gas bills, are not too great to be easily overcome.

Again, consumers have complained about gas-meter deposits. The companies, it is alleged, charge for meters twice over, first requiring at the opening of any new account, a deposit equal to the value of the meter, and then charging for the same meter a monthly rent beside. Were any such two-fold payment claimed, the public would undoubtedly be justified in resisting it. Such an abuse could be defended on no principle of justice. And if fortified by legal sanction, the outrageous imposition would render infamous any corporation that attempted to enforce it. *A priori*, we might conclude, therefore, that our gas companies officered as they are by men of great ability and discernment, are too keenly alive to their own interests, and too sensitive to the public disapprobation, to place themselves in so unenviable and so false a position. The case, however, resolves itself into a question of law and a question of facts. With regard to the facts, we have on the one side the evidence of certain consumers who are under the impression that they have paid a meter-deposit, and on the other the decided contradiction of the representatives of the companies, who say positively that no meter deposit has ever been made or asked for. As for ourselves, we think that the latter is the truth. However this may be, the law of the case is plain.

The statute of 14th April, 1859, cap. 311, is decisive on this point. It recognizes no remuneration as due from the consumer for his meter except a rent, and if any person has ever paid a meter-deposit, he has an obvious legal remedy. When he has proved his case, which will be an easy task if he has preserved his vouchers and receipts, he can demand the instant restitution of his money with interest. The meters now used in this city, are worth very little short of half a million of dollars, and are all required to be owned and kept in repair by the respective companies, the only return allowed them for their heavy outlay in providing these registering instruments, being, as we have said, a rent proportioned to the original cost. The companies acknowledge themselves to be in the position we have described. Consequently we expect to hear no more of the meter-deposit question. As, however, some ill feeling has been awakened in regard to the charges for meters, it would be a graceful and popular movement on the part of the companies if they would consent to forego their legal claims for meter rent, discontinuing their charge for the use of those instruments, and supply them free to the consumer. Yet it must be remembered that the law obliges the company to furnish to all applicants, and that there are a class of consumers whose bills are so small that their free use of a meter would be almost without an equivalent.

But there is another sort of deposit which is also complained of as has recently been illustrated in the Peckham case. The gas companies for several years past have demanded of some consumers, as security against bad debts, a payment in advance; or, as they term it, *a gas-bill deposit*, which is fixed at a sum about equal to the estimated value of two months' consumption. Between the gas companies and their customers there is in this matter no conflict of evidence. The fact is admitted on both sides. But the legality of this gas-bill deposit seems not so well understood. Yet, as the law stands, the right is clear. The seventh section of the act just referred to, enacts:

"That every such gas-light company may require that all, each and every person or persons, to whom such company shall supply or shall be requested to supply gas for lighting any building, room or premises, deposit with such company a reasonable sum of money, according to the number and size of lights used or required, or proposed to be used for two calendar months, by such person or persons, and the quantity of gas necessary to supply the same, as security for the payment of the gas rent, or compensation for gas consumed, or rent of meter, pipe and fixtures, to become due the company."

This statute applies to all the gas manufacturing companies in the State of New York. Consequently every consumer of gas within its area may legally be required to make the deposit in question. Many of the English companies enjoy the same privilege. But none, we believe, of the latter corporations are fettered by any condition adapted to operate as a check, and to prevent needless exactions. The New York gas companies, on the contrary, are curbed in their demands by the proviso, under the same section,

"That every such gas-light company shall allow and pay to every such depositor, legal interest on the sum by him deposited, for and during the time his deposit shall remain with the company."

The effect of this wise appendage to the law is obvious. So long as our companies can borrow money in Wall-st., at 5 per cent, there is little danger of their overburdening themselves with deposits at seven per cent. Hence about one-fifth only of the consumers' gas-bills in this city are secured by deposit. And if, as is affirmed, the demand is confined so far as possible to our floating population, from whom the only means of assuring payment at all is to receive it in advance, no objection should be raised to it. For small, comparatively, as is the proportion of advance-payers to those who receive credit, the deposits, according to published statements, cause to the companies an annual loss of several thousand dollars in interest alone. This evil, however, they say, they are compelled to submit to as an indispensable condition for the averting of far greater losses through defaulters. Since, therefore, four-fifths of the consumers are practically regarded as safe and capable of receiving credit, the deposit question resolves itself into this form: Shall the gas companies exercise the inalienable right of every man to choose whom he shall trust, or shall a manufacturing copartnership bound by the law to sell their property to all comers, be prevented from securing themselves and the public, even at some loss in interest of money, against fraud or dishonesty in their unknown customers? It must be borne in mind that the law compels the companies to furnish the gas; and surely then it is but just that they should protect themselves from being swindled. The gas bill deposit thus viewed seems equitable in its nature, though liable, through infirmity of temper, or errors of judgment, to be a source of occasional resentments, vexations, and affronts. Most of these evils, however, may be safely left to work their own cure. With a free press outside the company, and administrative ability within it, any such abuses will be kept in check.

Another complaint is, that the arrears of defaulting consumers have been sometimes charged to the next tenants. The existence of this practice is denied by the companies. Any such claim is obviously unjust, though in some parts of Great Britain and in a few of our American cities, it is sanctioned by usage and law. It has been affirmed that there are British cases on record in which the property of a new tenant has been sold by the sheriff to pay a gas debt incurred by his predecessor. The law of this State is not so absurdly and intolerably unjust. No person is liable except for his own gas bill. This is evident from section 6, which enacts that

"Upon the application, in writing, of the owner or occupant of any building or premises within one hundred feet of any main laid down by any such gas-light company, and payment by him of all money due from him to the company, the company shall supply gas as may be required for lighting such building or premises, *notwithstanding there may be rent or compensation in arrears*, for gas supplied, or for meter, pipe, or fittings furnished *to a former occupant* thereof, unless such owner or occupant shall have undertaken or agreed with the former occupant to pay or to exonerate him from the payment of such arrears, and shall refuse or neglect to pay the same; and if, for the space of ten days after such application, and the deposit of a reasonable sum as in this act provided (if required) the company shall refuse or neglect to supply gas, as required, the company shall forfeit and pay to such applicant the sum of ten dollars, and the further sum of five dollars for every day thereafter during which such refusal or neglect shall continue."

If, therefore, any such cases as those alleged occur in this city or State, which we do not believe, they are gross violations of the statute, and should be opposed and resisted with promptness and spirit. The seventy gas-light companies in this State, rich as some of them are, and representing altogether an aggregate capital of thirteen millions of dollars, could none of them make good any such claim against the poorest citizen, for every one of these companies is strictly prohibited from attempting to make one man pay for the gas used by another.—*The World.*

THE WATER GAS.

Mr. J. Milton Sanders, the inventor of the Water-Gas, now being exhibited in Philadelphia, in a letter to one of the weekly papers, says:

You refer to the water-gas now being used in Narbonne, in France. This you assert is *real* water-gas; it being pure hydrogen. If the citizens of Narbonne burn pure hydrogen gas, (and they did a brief while ago, but were discontented with it) then their illuminating vapor is not *real* water-gas, as one of the constituent gases of water is absent. The light given by Narbonne gas is a very indifferent one, as it is derived from the heat of the burning hydrogen impinging upon platinum, which metal becoming white hot, gives out an illumination which is far from being satisfactory. The first experiments I made upon water-gas, were similar to those formerly burned at Narbonne (for I believe it has been discarded) but it proved so unsatisfactory that I was soon induced to give it up.

You were pleased to term the gas of Mr. White and that which I prepare from water a "so-called water-gas," and which you designate as a mixture of the gases resulting from the decomposition of water with that generated from resin. I regret that before you had so frequently reiterated such a statement you had not learned its absurdity by actual experiment. It has been ascertained, after the production of several millions of cubic feet of my water-gas, that twenty-five pounds of resin will properly carbonize 1,000 cubic feet of this gas until it gives out an illumination one-third greater than ordinary coal gas. Now, we all know, that resin when used *per se*, will produce but *one hundred* and *fifty* cubic feet of gas. If the addition of twenty-five pounds of resin—added to the light carburetted hydrogen and the carbonic oxyd gas produced from water by its decomposition in the presence of ignited carbon—produce 1,000 cubic feet of gas which give out an illumination fully equal to the gas generated from resin, then how do you sustain your assertion that my water-gas is resin gas diluted? It is just this species of dilution which the public want. The above assertions relative to the quantities of the gas produced, and the illuminating properties of it are susceptible of demonstration. You can satisfy yourself upon these points, by calling upon the engineer of the water-gas works at the Girard House, Philadelphia, where you can witness the manufacture of the gas, and examine the statistical tables there obtained. But I wish to direct your attention to another fact, of which I desire that you will satisfy yourself experimentally. If resin is allowed to flow into ignited carbon at the temperature necessary to produce good water-gas, there is not produced any illuminating gas whatever, but on the contrary such a large quantity of carbonic acid gas is generated that *no illumination* is the result. Thus you perceive that my water-gas cannot be the constituent gases of water diluted into resin gas—or as you would have it, the light is not derived from the resin gas, as there is none of that, as an illuminating gas, present.

I have thought proper to mention these facts to you, so that before you again assert that the water-gas derives its light-giving properties from resin gas, you may investigate the subject experimentally. Your description of the illuminating gas used at Narbonne, France, is very obscure and unsatisfactory. You inform us that the vapor of water is passed into a furnace, and that the resulting carbonic oxyd and light carburetted hydrogen gases are taken out from above. But from what source do they derive that amount of carbon necessary to impart illuminating properties to these gases, or rather to the latter gas? If they attempt to give illuminating qualities to these gases derived from water, they will necessarily be forced to resort to the use of some hydro-carbon for that purpose. In that case, if they are successful, and adopt the most feasible plan, they would at once infringe my patent there. In fact, so impressed are these very manufacturers with this trouble, that they are now in communication with my agent in France, upon the subject of the introduction of my water-gas instead of the insufficient light they have hitherto been making.

In conclusion, I would say, that after the manufacture of over five million cubic feet of my water-gas, those possessing it have arrived at the conviction, that it is the cheapest and most brilliant gas that can be made. In fact, so strong is this conviction, that despite the interested opposition of heavy capitalists, they have resolved to introduce the water-gas to the public, in all the principal cities in this country and Europe.

J. Milton Sanders.

New-York, August 11, 1860.

GAS-LIGHTING BY ELECTRICITY.

BY ARCHIBALD WILSON.

From the Journal of the Franklin Institute.

To render the application of electricity to the lighting of gas practically a success, several things are required, the want of any one of which is sure, sooner or later, to disappoint both the experimenter and the public. The mode of application must be simple, easy to adjust, efficient, reliable and economical. The method or plan that shall claim public patronage must combine all these requisites. Science seems to have demonstrated that electricity is susceptible of such an application but upon two general principles—one is by using the current to heat a platinum wire; the other to generate the electric spark. While it has been as universally admitted that the latter would most fully furnish all the requisites for success, if it could be applied, yet, with the exception of very limited experiments in the laboratory or lecture-room, it has been as universally abandoned as impracticable for the following reasons supposed to be insurmountable: First, the current which generates the spark is of such extreme intensity, that it has been deemed impossible so to construct a long circuit as to protect or control the current for any great distance, owing to its tendency to fly off to surrounding objects. And, second, the instruments heretofore used to generate the spark have been so extremely susceptible to atmospheric changes as to become entirely inoperative in a moist atmosphere. Hence, experimenters in this direction have given their attention and skill almost exclusively to the application of the heated wire to this purpose. Still, the difficulties which attend this plan were so early presented,

The bridesmaid at Aunt Fannie's.

 Nov. 5. 1887

and so clearly brought out by the late Dr. Hare of your city, that it would seem that the most unscientific experimenter must have been convinced of its impracticability beyond a very limited success.

These difficulties are, first, the current used to heat the wire is a quantity current, and generated by a voltaic battery. Consequently, the entire source of the power is constantly decreasing in efficiency, and wearing away under the action of the acids upon the metals used. Frequent repairs, therefore, become necessary. Then, as the number of wires to be heated is increased—and there must be one of these wires over each burner—or the length of the circuit is extended, the source of the power must be increased also, till, where a large number of burners is used, and the current is to be passed through a long circuit, the battery becomes immensely increased and the outlay to replenish it and keep it in repair is correspondingly large, as five hundred pairs of plates, other things being equal, wear out just as rapidly as five pairs do. Hence, it becomes a very great desideratum, economically, to reduce the number and size of the plates as much as possible, and yet produce the desired result.

Other difficulties, quite as serious practically, are continually met with in the wires to be heated; the least variation between them, either in their length, thickness, or the quality of the metal, being sufficient to prevent the gas from being lighted, owing either to the fusion of some of the wires by the current, or the failure to heat others sufficiently. And then these wires, as one must be placed directly across the top of each burner and stand permanently in the jet of burning gas, soon become encrusted with a thick coating of soot. In this condition, the action of the battery must be continued till both the wire and its coating of soot are heated to the point for igniting the gas; or if the battery has fallen below the required power to heat these, it fails altogether to light the gas. In either of these cases the room is unavoidably being rapidly filled with the escaping gas. The length of time required to coat these wires with soot, will vary with the purity of the gas used. Another difficulty with such wires is, that though the battery-power might be sufficient to heat the wires, yet a gust of wind or a too strong pressure of gas striking them will often cool them down below the igniting point, and time must be given for the gust of wind to cease or the gas to be regulated to the proper pressure.

This plan of lighting gas by the heated platinum wire demands, in all cases, an absolutely unbroken metallic circuit. The least break in the circuit, though it amount to no more than the hundredth part of an inch, is amply sufficient to prevent all action in the battery and to leave a room or street in total darkness till such break is repaired; and this break can be repaired only by searching for it through the entire length of the circuit, as this can give no sort of signal to inform the operator where the break may be found. Though this plan may be adjusted with the greatest exactness, and even so as to do the work, with the greatest care of the operator, for several days or weeks; yet, in an instant, from some unaccountable variation in the action of the battery, a wire is fused and the circuit broken, thereby producing the most serious annoyance at the most important junctures.

The difficulties of this plan, so clearly brought out by Dr. Hare and others, have led all scientific experimenters to abandon the hope that it can ever be applied with any permanent and satisfactory result, and to base their expectations and hopes upon the use of the electric spark for this purpose, should an instrument not liable to change with atmospheric changes and of sufficient power ever be invented. The spark, as it results from great intensity of the current and leaps through free air, does away at once with all necessity for preserving an unbroken metalic circuit, since its success in gas lighting depends upon a break over each burner; and also does away with the small platinum wires to be heated over each burner. It was not until the discovery of the spark from the induced current generated by an instrument which was in no sensible degree susceptible of atmospheric changes, that a current seemed to have been discovered that could be relied upon permanently to do this work. It was an examination as to the reliability and efficiency of this current that led me to the conclusion that in it was contained all the power that the most enthusiastic experimenter in this direction could desire. It has been with this current, mainly, that my experiments have been made and it is my application of this current to the lighting of gas that I desire to exhibit before you this evening. Before making my experiments, I will, with your permission, give a short explanation of my mode of applying this current. I think I shall be able to satisfy you that the number of burners to which I apply it this evening will exhaust but a very small portion of the power which I have here. I have connected my insulators and wires with the ten burners of your room and with the fifty-six burners of the chandelier which I have suspended from the centre of the room. In order to save the power of my current and use it with the utmost efficiency, I insulate all the burners in the room, by placing between the burner and the gas-pipe two small pieces of some non-conducting material, in this case hard rubber, which bears a high degree of heat. The lower piece of rubber is furnished at one end with a female screw, and fitted to the gas-pipe or fixture; the other end has a male screw and is fitted to the burner. Before putting the burner on, I slip over the male screw of the insulator a looped copper-wire—in this case No 24—and then another small piece of insulator; after which I screw on the burner. The looped wire is then bent over so that the end comes just outside the jet of gas, and within an eighth or a sixteenth of an inch from the top of the burner. I then connect a looped wire with a burner or two looped wires and two burners in succession till all are connected, and these with my instrument; when my circuit is complete, with each burner making part of the circuit. For the sake of showing the safety with which I can pass over even the smallest wire any amount of current which my battery and coil can generate, my circuit wire is in this case No. 36 uncovered copper wire. My connexions are now complete, and by means of the insulators at each burner the current will be made to pass around on the top of the burners, and as the electricity leaps across the space from the looped wire to the burner, the spark will appear and ignite the gas with the rapidity of lightning.

The electro-motive power which I use is a voltaic battery and Ritchie's improved inductive apparatus. My battery by itself, and when applied to the heating of platinum wire to show its efficiency, is barely sufficient to heat wire enough to light two burners. If applied to a short piece of my conducting wire, No. 36, it would instantly burn it off. When connected with my coil it will not heat the smallest platinum wire that I have been able to obtain, and will pass with perfect safety over the smallest conductor. And yet I think I shall be able to show you that this current from a battery so inefficient in itself, will, with the coil, ignite 500 or even 1000 jets instantaneously; thus increasing my battery-power several hundred fold. By bringing the pointers at the poles of my coil within one inch and a quarter of each other and allowing my wires to be connected with the chandelier. I think I shall show you that this current, rather than leap across a single space of free air one inch and a quarter long, will leap across the fifty-six spaces on the chandelier, whose aggregate distance is eight inches. I shall also show you that if I break the wire entirely away from one pole of the coil, I shall yet light a large proportion, if not all, of the jets on the chandelier. Or if a break accidentally occurs anywhere along the circuit, the spark will at once notify where the break is by the smart cracking sound which it will give.

The coil, which is the main source of the efficiency of this plan, does not wear out and needs no replenishing. The only part that does wear out and that can require expense to repair, is the very small battery which I use, which can scarcely require the outlay of a shilling a month to keep in repair. The acid in my battery I have often reduced to 1 part to 24 or 30 water, using Smee's battery. No variation in the battery endangers the circuit, and the whole arrangement is so simple that anybody can keep it in repair.

With 5 Smee's cups, plates 8 inches square and a very weak acid, I have sent this current over 600 miles of telegraph wire, without the aid of a single cup of a relay battery, and obtained a spark 2¼ inches long. So that, had I a wire connected with all the street lights of your city and ending at my instrument in Wall Street, New York, I believe I could light your whole city from my office.

A gust of wind or high pressure of gas striking on this spark has no other effect than to increase its size, and thereby add to the certainty of igniting the gas.

The advantages of this method are then:

1. It avoids the extreme care required in other plans to preserve an unbroken metallic circuit.
2. No degree of variation in the battery-power will endanger the connecting wires, though reduced to the smallest size.
3. The waste of the battery is reduced many hundred fold, and the expense of keeping in repair is proportionally decreased, while its efficiency is as greatly increased by connecting with the inductive apparatus.
4. If a break in the circuit occurs out of place, a large proportion of the jets will still be lighted, while a smart cracking sound will at once direct the operator to the place where the break may be found.
5. No pressure of gas or gust of wind can affect the efficiency of the spark to do its work.
6. The smallest spark is amply sufficient to ignite gas.
7. This current is readily controlled, as is proved by its passing over 600 miles of telegraph wire with ordinary insulation—a length of circuit more than sufficient to reach every public light in the largest city of the Union.
8. It insures great saving of gas, from the fact that rooms need not be lighted till the moment they are wanted.
9. By removing all necessity for the use of matches and torches about buildings, it affords great security against fire.
10. The conducting wire may be passed through the most inflammable materials with perfect safety, as the current used will not heat the smallest wire.
11. Its simplicity enables any one to operate and keep it in repair.

WESTCHESTER, PA.—Buckwell & Brick, builders. Have used Merrick & Sons' iron retorts, and are now adding J. K. Brick's clay retorts. Use Harris's & Down's meters, and a gas-holder of Merrick's manufacture. Westmoreland coal is used, "costing from $5 55 to $9 75 per 2000 lb." How this enormous difference in price can exist we are not advised. No meter-rent charged. About 5 miles mains laid, from 3 to 8 inches diameter.

ROCK ISLAND.—Works built by William H. Herrick. Thomas Hoadley's clay retorts used, and Gratz's meters. Illinois coal is delivered at the works at 9 cents per bushel of 80 lb. No photometer is used, but the gas it stated to be of twelve candles power. Meter-rent 25 cents per month. About two miles pipe laid, from two to four inches diameter.

OPPOSITION BALLOON LINE TO LONDON.

Mr. Samuel Wilson, the aeronaut, who lately made an ascension from Pittsburg, Pa., proposes to make Boston, Mass., the starting point for his experiment of attempting to cross the Atlantic in a balloon. In a letter, dated Philadelphia, August 17th, he says:

"I have constructed the balloon 'Great Western,' and also the 'American Eagle,' for the express purpose of making a voyage with them to Europe. They cannot furnish gas to inflate them at Pittsburg or Allegheny city. I have thought of coming to Boston and making my first trip across the Atlantic with Boston gas, if the gas company can furnish me with one or two hundred thousand cubic feet.

"I would like to start for Europe by the 1st of October, if not before, and would give several lectures on the subject of Aerial Navigation, and the Currents of the Atmosphere, and endeavor to show that a balloon ride across the ocean would be as safe as taking passage on board of the Great Eastern.

"I would keep the balloons inflated at Nahant, Mass., or on the Fair Grounds a few days before leaving for Europe, and hundreds of your citizens might have the pleasure of riding a few hundred feet in height with a strong rope attached to each air ship.

"If any one of your scientific citizens or those connected with the press, desire to go with me on my trans-Atlantic trip, I would be glad of their company, and land them safe and sound in less than three days in some part of Europe."

We shall send a reporter for the AMERICAN GAS-LIGHT JOURNAL with Professor Wilson, unless Lowe carries him off first. He has been waiting for Lowe since last September—a year to day—but he is not at all impatient.

SPHEROIDAL STATE OF WATER.—Every one is acquainted with the phenomenon called the spheroidal state of water, shown in the globular form assumed when a small quantity of the fluid is thrown on a red hot metallic surface. Boutigny stated that "the temperature of bodies in the spheroidal state is invariable, and always below their boiling point; for water, it is 205° F." Other authors give different statements, and the question could not be decided by the ordinary way—viz.: plunging a thermometer into the liquid—as the heat radiated from the incandescent surface, was always enough to effect the result. A different method of solving the problem is adopted by M. de Lucas, professor of chemistry at the University of Pisa, who uses water which is rendered blue by the iodide of starch, which, it is known, begins to be discolored when the temperature is raised to 120° F., losing color entirely at 176°. If a little of this water be thrown into a red hot platinum crucible, it assumes the spheroidal state, but is not discolored. From this fact, it is evident that the temperature in question is certainly below 176°, and, probably, as low as 120°.

WATER WORKS IN EGYPT.—The viceroy of Egypt recently inaugurated, in the city of Alexandria, the new works for the distribution of water, and the new promenade in Consuls' square. His Highness, surrounded by a brilliant staff, placed himself in a splendid tent on the Promenade, and gave a signal, at which two columns of water rose to a height of 60 feet from two basins. The crowd hailed the sight with acclamations. Alexandria, though with a population of 150,000 souls, has hitherto only been supplied with water collected by aqueducts in old cisterns from the overflow of the Nile; but the new works bring water direct from the Canal Mamoudieh, fed by the Nile. The water is filtered in immense basins, and is then distributed in all parts of the town by conduits nearly 40,000 yards long. Distribution is effected by means of steam engines, and the third ready to replace either in case of accident. The new promenade gives fresh air to the city. It has alley 350 yards in length, sheltered by trees, and is ornamented by basins and marble seats.—*Galignani.*

SARATOGA SPRINGS, N. Y.—This company was well watered at the start, but getting into the hands of practical men, the capital has been reduced, and Mr. Durkee's management has brought the works into a good shape generally. They use iron retorts, Down's & Gratz's meters, and a photometer. Coal from Pennsylvania Coal Company and Liverpool. No charge for meters. The transient nature of the population, mostly strangers, who flutter away for six weeks in the large hotels here, limits the heavy consumption of gas to a very brief period. The Corporation own a few public lamps, which are seen only in the day time, so that the dividends are not very fat.

WHEELING VA.—Builder of the works, Mr. John Jeffrey, of Cincinnati, O., and are entirely satisfactory. Sweeny's iron retorts used, Gratz's meters, also a photometer. Length of mains 8 miles, of 2 to 8-inch pipe. Virginia coal used, at $1 50 per ton of 2240 lb. About 12,000,000 cubic feet of gas made in 1859. The report adds, "works prosperous, well built, economically managed, and no accidents."

RALEIGH, N. C.—Rosin works, built by Waterhouse & Bowes. Iron retorts from Traner, Jones & Co., and gas holder of G. W. Kratt. These works use a photometer. Rosin costs in Raleigh 90 cents per barrel. No rent charged for meters. Three miles of pipe laid, from 3 to 6 inches.

STAUNTON, VA.—Rosin gas works built by Waterhouse & Bowes; give entire satisfaction. Iron retorts, built by Mr. Reddy, Little Falls, N. Y. G. W. Kraft's gas-holder, Code, Hopper & Gratz' meters. No charge for meters.

THE AMERICAN GAS-LIGHT JOURNAL is published on the 1st and 15th of every month, and is specially devoted to

LIGHT, HEAT, WATER-SUPPLY, AND SEWERAGE.

Its purpose is to ascertain and make known all new discoveries in the science and economical application of LIGHT, and promote thereby the interests of companies and consumers; to encourage and aid the introduction of PURE WATER from Lakes and Rivers into TOWNS and Cities, and to improve the system of SEWERAGE, VENTILATION, and DRAINAGE everywhere.

Incidentally with these results, the business of all Gas and Steam Fitters and Plumbers; the erection of Gas-Works and Water-Works; the consumption of Coals, the manufacture and consumption of Coal-Oils, the manufacture of Gas-Pipe, Water-Pipe, Steam-Pipe, Gas Fixtures, Gas-Meters, Water-Meters, Retorts of iron and clay, and their varied apparatus; of Drain Pipes, Ventilating, Heating and Dredging Machines will be increased immeasurably.

THERE ARE 20,000 CITIES AND TOWNS IN THE UNITED STATES, CAPABLE OF SUPPORTING GAS-WORKS, WHILE THERE ARE NOT 400 GAS-WORKS IN OPERATION IN THE WHOLE COUNTRY!!!

New works are now springing up, however, every week, and they will continue to increase rapidly hereafter.

Advertisers of Gas and Coal Oil, Water, Steam, Sewerage and Ventilating apparatus, and of Iron and Brass manufactures, &c., will find the AMERICAN GAS-LIGHT JOURNAL the most desirable and efficient medium of any in the United States, going, as it does, direct to the parties interested in those subjects.

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THE
AMERICAN GAS-LIGHT JOURNAL.
ISSUED SEMI-MONTHLY.

SATURDAY, SEPTEMBER 1, 1860.

Although "there is nothing new under the sun," and the principles on which rest the proudest and the most brilliant human discoveries may have been known in some form for ages, still in the progress of science and art new adaptations of old laws, useful combinations of useless facts, and valuable results from unexpected and simple causes, are frequently developed, and reward the toil, perseverance and inductive sagacity of the ingenious inventor. In gas-making as in the other useful arts, these truths are often exemplified. Hence it is not of necessity a valid objection to any novel suggestion for economizing and for producing a cheaper article to say that an experiment somewhat similar has been tried before and has been found to fail. The opponents of water-gas projects should remember this. It may be true that without adequate results a large amount of capital has been thrown away in endeavoring to supply the public with a cheap illuminating material, derived, to a large extent, from water; and this fact, if established, constitutes a prudential reason of sufficient force to deter most men from risking their money in any such unpromising field of enterprise. Nor can we blame these persons if they are content with simply standing aloof from such schemes, and calmly awaiting the issue. But if they take upon themselves to say that because the thing has not yet been done therefore it is impossible; and because the contingent difficulties have not yet been surmounted, therefore those difficulties are fatal, and defy the genius and skill of man, they go, perhaps, a step too far. Difficulties beset all progressive action, and telegraph wires, railway locomotives, and ocean steamers were at one time pronounced, on the very highest authority, to be impossible, just as has been the case with water-gas in our own times.

Without expressing any opinion as to the relative merits of this or that method of producing water-gas, we cannot withhold our assent from the justice of the claim that each project should have a fair trial, and be candidly judged by its merits. Our readers will see, from an announcement in another column, that a proposition has been made to one of the gas companies of this city to introduce into their works and to test thoroughly the value of the water-gas apparatus, which has been frequently referred to in our columns as having been tried at Wilmington, Delaware, and as being now in use at the Girard House in Philadelphia. Should this proposition be accepted, we are sure that the most rigid investigation will be instituted, and that the most eminent authorities in this specialty will be consulted. Hence the result will doubtless be final, and will prove beyond question the soundness or the futility of the claims put forth. The public will then know, on reliable evidence, whether another name is to be added to the already extensive list of abortive water-gas schemes, or whether the long-desired and confidently anticipated goal has at last been reached.

The interest of the public in this matter coincides with that of the gas companies. For every economical contrivance which cheapens so important an illuminating material, without impairing its quality, increases consumption, and thus confers, both on the producer and on the consumer, reciprocal advantages. The lower the price of gas, the greater will be the demand; and the greater the demand, the larger will be the aggregate of profits.

In asking for the project of water-gas a fair trial, we have laid stress on the condition that this trial must take place before competent judges. One is often much amused at the undoubting facility with which persons who have seen experiments with water-gas unhesitatingly pronounce on its merits, though they confess themselves, at the same time, to be wholly ignorant of the rudest elements of that scientific and practical knowledge which are alone able to confer on any opinion the smallest real value.

The trial, to be satisfactory, should also be conducted on a sufficiently extensive scale. For large sums of money have sometimes been dissipated by relying too implicitly on results obtained from manipulations in the laboratory. Operations on the great scale often disappoint, and expedients which answer well in the production of a few hundred feet of gas, may prove inadequate, rebellious, and costly in large establishments yielding many millions.

In illustration of this point we may refer to the well-known experiments made long ago by Mr. GEORGE LOWE of London, in connection with his method of economizing by using up the waste tar as a gas-producing material. On a small scale this able and experienced gas-engineer succeded admirably. Several eminent men, relying on these experiments, pronounced the plan of converting tar into gas to be practicable and of great value. The tar-gas was affirmed to produce "a light equal in brilliancy to any oil-gas"; and so satisfactory were the reports of MR. LOWE'S invention, that one of the London Gas Companies erected the necessary apparatus, and afforded every facility and advantage for securing a perfect result. Notwithstanding, however, that the arrangements were under the personal superintendence of Mr. LOWE himself, the plan at the end of a year, proved thoroughly valueless. It was consequently abandoned, and has never since been resuscitated in that establishment. Numerous other instances might be cited, showing the importance of not trusting too much to experiments conducted on a contracted scale.

It has been alleged that the great gas companies are opposed to the introduction of water-gas, however cheap, rich and valuable. We cannot believe this. For if so, they would be opposed to their own obvious interests, supposing water-gas to be what it has been represented. The truth doubtless is, tnat the gas companies and the public await satisfactory evidence as to the real merits of the article. New-York, as the metropolis, offers the requisite advantages for a fair, complete, and satisfactory investigation. And the sooner the preliminary arrangements are completed the better.

At the present advanced period of the history of gas-lighting, it is not a little surprising to find so much of imperfect information and erroneous theory as are in some quarters prevalent in gas circles. Exploded ideas and effete schemes are not seldom rampant where one would least expect to find them. If in any place the "dangers" proverbially attached to a "little knowledge" afflict their victims more swiftly and more surely than elsewhere, that place is a gas-works. One of the exploded schemes which we have just incidentally referred to is even now not without admirers who would improve gas by introducing tar through a syphon into the retort during the last three hours of the charge, hoping thereby to obtain a uniform quality of superior gas even after the richest hydro-carbons have been separated from the coal. Thirty or forty years ago such a project might have well passed unchallenged, even by men of tried skill, accurate knowledge, and eminent ability. For the nature of the various hydro-carbides was then very imperfectly understood. Now, however, the case is otherwise, and the youngest gas-engineer may not only inform himself thoroughly on all scientific points connected with his profession, without encountering any obstacles that will not easily yield to patience and intelligent industry, but he may also indulge the hope of aiding by well directed observations, the development of the art to which he is devoted. At any rate he will be preserved from numerous practical errors of grave importance and serious pecuniary interest.

When for instance it is stated to him that for the production of light "we need a solid body in addition to incandescence;" that hydrogen, when burned produces the latter, while carbon supplies the former; and that consequently "pure hydrogen gas enriched by four of five per cent of hydro-carbon vapors, would make an illuminating agent of higher value than the coal-gas furnished by any company in the world," it seems an easy task to make gas by cheaper and more expeditious means than those ordinarily in use. The knowledge, however, of the experiments made in various directions soon removes the *mirage* and dissipates delusive theories. The conservative power of gases over each other, and their obstinate indisposition to change their state except in specific modes, and under certain circumscribed conditions, is thus brought into view. The problem which seemed so easy assumes its true character. The mountain top which seemed so near recedes. The disappointments, the perplexities, the loss of reputation, position, or property, into which crude theories might have hurried him are prevented. In all departments of active life the same principle holds good. What masses of wealth might have been spared, what multitudes of dupes might have been saved, what mournful scenes of penury and ruin might have been averted, had sound knowledge instead of culpable ignorance, prompted the ventures and directed the exertions of the sufferers.

The oil-wells at Mecca, in the State of Ohio, to which we made some reference in our last issue, are being worked with success. Five months ago the attention of several Pennsylvanian speculators who had had their eyes opened by the wonders of Oil-Creek, was attracted to these oil springs, which, though known for half a century, had never been turned to account, but were rather a nuisance by contaminating the water. About fifty wells have been sunk, and the yield from one of them amounts to 13 or 15 barrels a day. The oil we have not yet seen. It is described as dark, thick, and almost devoid of unpleasant odor. We fear its cost will preclude its use as a gas-making material, but being very easily refined, it will perhaps be as valuable for illuminating and lubricating purposes as the average samples from Pennsylvania. The extent of the oil-producing district has not yet been ascertained with accuracy, and the permanence of the supply is still doubtful. The oil is easily accessi-

ble, as the most copious flow is found at about fifty feet from the surface, and the rock is so easily penetrated that a well may generally be sunk to that depth within a week, and at a cost of fifty dollars. To fit it for the reception of a pump something more is necessary, but the entire expense is comparatively small. The most promising surface-indications are found within a limited area, which will probably become the scene of as much excitement and the theatre of as striking mutations of fortune as the busy, grimy, populous region of Oil Creek, in Pennsylvania. Already the influx of adventurers is considerable, and without doubt the sober habits of the rural population will be modified as the opulence and prosperity of the district augment. That a large amount of capital will be created there is certain, and the resulting development of the resources of the district, will confer commensurate advantages on the mercantile, manufacturing, and railroad interests of the vicinity.

TO OUR FRIENDS IN GREAT BRITAIN.

The AMERICAN GAS-LIGHT JOURNAL will be issued hereafter on the 1st and 15th of every month. The subscription price is also reduced to TWELVE SHILLINGS sterling per annum, payable in all cases in advance. Post-office orders can be remitted to our bankers in London, Messrs. WHEATLEY, STARR & Co., No. 156 Cheapside, to whom please also send the full address to which the JOURNAL is to be sent. We have received payment for several subscriptions in Great Britain, for which we cannot send the JOURNAL, because the addresses were not given.

PERSONAL.

Among the visitors to these Rooms lately we may mention Messrs. P. Peebles, of the Quebec, C. E., Gas-Works; the Superintendent of the Toronto, C. W., Gas-Works; G. Donty, of the Columbus, O., Gas-Works; W. W. Beggs, Superintendent of the San Francisco, Cal., Gas-Works; Mr. Gleckmayer, of the London, C. W., Gas-Works; Mr. S. Kelding, President of the Stamford, Conn., Works; R. A. Holmes, Superintendent of the Baltimore, Md., Works; Dr. Antisell, U. S. Patent Office; Major Alden, U. S. A.; Professor Wise; Mr. King, of Jacksonville, Ill., Gas-Works; James Bogardus, Inventor of the Dry Gas Meter; and Señor Arosemena, of the New Granada Legislature, Bogota, who seeks parties to build gas-works in that city.

Mr. T. Duffield Wiegand, late of the Philadephia Gas-Works, has succeeded James R. Smedberg, Esq., as Engineer of the Savannah, Geo., Gas-Works.

We regret to hear that Mr. Robert Price, jr., assistant to John Jeffrey, Esq., Engineer of the Cincinnati, O., Gas-Works, has been called home to England in consequence of a serious accident to his brother. Mr. Price carries with him the best wishes of many friends in this country.

BUSINESS DEPARTMENT.

Messrs. Cornelius Baker & Son advertise gas-coals from Newcastle, England, to which the attention of gas companies is directed.

The New York Kerosene Oil Company give notice that their works are now in full operation. With an ample capital for the prosecution of their business, they will be able to avail of every favorable condition of the market to offer their oils at the lowest prices.

Shares of the New York Gas-Light Company have changed hands within a few days, at 225 per cent., i. e., at 125 per cent. above par.

WATER-GAS GOSSIP.

We hear a report that the Fifth Avenue Hotel is to be lighted with water-gas. It is also rumored that certain parties have under consideration the policy of establishing a water-gas company here, to head off the Metropolitan opposition-orthodox Gas-Light Company. The first of these rumors is groundless. The second arises probably from the fact that a proposition has been made by the proprietors of Sanders' water-gas to the Manhattan Gas-Light Company to erect apparatus at one of their stations, for the purpose of testing the principle in this city. The proposition as it stands will not be accepted; but with some modifications (we speak unadvisedly, entirely) it may be. We hope that every possible facility will be given by our city gas companies to give the water-gas advocates a fair chance here. They deserve it. Messrs. Appleton & Graham, of Boston, Mass., the well-known manufacturers of portable gas apparatus, have secured the agency of the water-gas for New England, and will proceed to erect works on that principle in one of the villages near Boston at once. This is the only way to prove its practical advantages, and they are now, for the first time, about to be ascertained.

A COAL-OIL LAMP, ON A NEW PRINCIPLE.

Such of our readers as are interested in the manufacture or consumption of coal-oils, will be gratified to learn that a lamp, to burn Kerosene and other hydro-carbon oils, without a chimney, and free from the objections that have heretofore been deemed insurmountable, has at length been perfected.

We have seen the lamp, and can assure our readers that it will accomplish all the patentee claims for it, viz.: Brilliancy of light, persistency of flame, freedom from smoke, portability and safety.

We sincerely congratulate Mr. Racey, the inventor, upon his decided success, and cannot but believe that the Acamine Lamp, as it is termed, is destined to produce a revolution in the use of coal-oil lamps, and at the same time greatly stimulate the consumption of the hydro-carbon oils now in such very general use throughout the United States.

OUR NEW PHOTOMETER ROOM.—We are indebted to THEODORE W. PARMELE, Esq., for the arangement of our new Photometer Room, said to be one of the best, if not the very best in this country, and it is at the service of all who wish to measure their own light, or ours.

VALUE OF GAS WASTE FOR AGRICULTURAL PURPOSES.

Ammonia is the great source from whence plants derive their chief supply of nitrogen. When ammonia water is judiciously applied, it wonderfully increases the growth of grass, wheat, turnips, and indeed of most vegetables. Out of numerous instances, the following are selected in evidence of its beneficial action:

In the year 1841, Mr. Wilson of Largs, in Scotland, communicated to the Philosophical Society of Glasgow, an account of an experiment made by him. "A piece of three years' old pasture of uniform quality, I divided into ten lots of twenty perches each. All the lots were manured at the same time with the articles in the following table, and the grass cut and made into hay in July. Each application cost the same.

No. Lot.	MANURE.	Produce of the Lot.-lbs.	Lbs. Hay per Acre	Increase per acre over that unte'd
1	Left untouched	420	3360	
2	2½ barrels of Quicklime	602	4816	1456
3	1 ton of Lime from Gas Works	651	5208	1848
4	4½ cwt. Wood Charcoal powder	665	5320	1960
5	2 bushels Bone dust	693	5544	2184
6	18 lbs. Nitrate Po'ash	742	5936	2576
7	20 lbs. Nitrate Soda	784	6272	2912
8	10 bushels Soot	819	0552	3192
9	28 lbs. Sulphate Ammonia	874	6776	3416
10	100 galls. Amm. liquor from Gas Works	945	7562	4200

A similar experiment was made, though with another purpose, by M. F. Kuhlman, a German chemist. He tried seven manures, all containing ammonia, and the result was that the ammoniacal liquor from gas works produced more hay than some of the manures, and less than two of them.

Mr J. Watson says, "The ammoniacal liquor from gas works has been found a very great improvement as a manure for the raising crops of grass, by being sprinkled on the field in the same way as water is put on public streets in large towns, to keep down the dust in dry weather. I have myself seen an experiment of this tried, and can say that part of a field of grass sprinkled in this way, after first cutting, was far superior to any other part of the field receiving manure of any other kind, and that the part so sprinkled or showered over was ready to be put down a second time in the course of between fourteen days or three weeks, whereas the other part of the field cut at the same time, was only beginning to spring or rise from the roots in that time. It had to be mixed up before use with four parts of water."

Another gentleman says, "In the beginning of April I watered half a clay-land meadow of five acres with ammoniacal liquor from gas works, diluted with five times the quantity of water. In three days I perceived that all the moss and many of the finer blades of grass close to the ground were destroyed. The bulk of the herbage, however, appeared to be unaffected; but in a week there was a decided improvement in the portion manured, and from that time there has been an increased quantity and an improved quality of grass. Its color is darker than the other. Any stock prefer grazing on that side of the meadow."

Mr. Joseph Butterworth of Rochdale states, "I put on a portion of my meadow three barrels of ammoniacal liquor obtained from the gas works and mixed with an equal portion of water. The difference was seen in a short time—the grass was of a lively dark green, and was considerably higher and thicker than the other parts of the field; indeed, the difference in appearance was so great that many persons came to me to inquire as to the cause. The crop of hay was full twice as much as from that part of the field where it was not applied. Since that time I have used ammoniacal liquor on the whole of my farm."

An experiment by J. M. Tylden. "I selected two perches of similar adjoining land. It had a good crop of mangel wurzel upon it the previous autumn. No. 1 was manured with half of the following compost: one gallon ammoniacal gas liquor, half a bushel sawdust, coal ashes and gypsum sufficient to fix the ammonia, half a pint of gas tar, one pound Nitrate of soda, and four barrow loads of rubbish, turf and weeds. In about three weeks the gas liquor had decomposed this mass; half of it I dug into No. 1, a few days before planting. On No. 2, no manure of any kind was put. Both lots were planted with wheat and came up well. In a short time No. 2 was much eaten by the wireworm, whilst No. 1 was scarcely touched. No. 1 yielded one gallon two quarts and No. 2 three quarts one pint. The compost appears to destroy the wireworm."

A question may arise as to the best method of using it and as to the most suitable time. The most proper strength for using it would be to mix the ammoniacal liquor as it comes from the gas works with at least five parts water. If it be laid on the land during a shower it may be used stronger; about half liquor and half water; cloudy weather is the most fitting for its application. An excellent mode of using ammoniacal liquor would be to mix it with substances that will absorb it, such as dry sawdust, charcoal, and the dry scrapings of the road; and when thus absorbed to be thrown on to the land or ploughed in. The most suitable time of the year to apply it is, on grass lands after the grass has begun to grow in the spring and immediately after the first cutting of grass—if in the spring, the proportion should be one gallon of liquor to seven gallons of water; if after cutting the grass, about one part to five parts. When used for seeds or roots, they should be allowed to sprout before its application, and then used in a very weak state, or else used as a compost before they are sown or set. To the gardner, especially, there is an advantage in the use of gas ammoniacal liquor, because of the property it possesses of destroying noxious insects. A convenient mode of applying the liquor in such cases would be with a large syringe. What has been said may induce some *to try the effect of the application of ammoniacal liquors on their land.*

GEORGE D. CABOT, Agent.

LAWRENCE, MASS., GAS COMPANY'S OFFICE,
Aug. 20, 1860.

A NEW WET GAS-METER.—Messrs. Giles, J. Wilson, and David H. Fox, of Reading, Pa., have invented a new wet gas-meter, for which they claim the following advantages. The name they give to it is the Reconciler Meter:

1st. Water can be filled into it without turning off gas.

2d. A child that can carry a small pitcher of water can fill a meter as well as the most experienced gas-engineer.

3d. There are no screws to take out in going to a meter (an improved meter) to fill it.

4th. There cannot be too much water put in, as there is an outlet that permits it to flow out when it raises to the proper level, without any looking after.

5th. The dry well tube cannot be overflowed in filling the meter, or by condensation in the pipes through the building, and flowing into the meter as it does in the old arrangement.

6th. It is not necessary to send to the gas office to have a man come to fill meters, when the lights go out in the evening, when it is difficult to find a man in readiness to attend to it.

7th. There is no danger in going to a meter in the night with a light to fill it, there being no screws to take out to let gas escape through, which there would be danger of igniting, as with old meters.

8th. It is impossible for the Reconciler Meter to register more gas than passes through it.

9th. It can be applied to any meter, old or new, at a trifling expense.

10th. When consumers set their stop key at what they wish to supply their business, it is not necessary for the man who fills meters to interfere with it in filling, as with old meters; thereby avoiding the complaints against gas companies of wishing to make large bills, which cannot be avoided with the old arrangement of gas-meters.

We infer that the name given to this meter, is an indication of its fitness to operate as a Reconciler between the companies and consumers. Let us fondly hope that this may be the result.

QUINCY, ILL.—Works built by Mr. Thomas Pratt of the St. Louis, Mo., gas works, and are reported to be highly satisfactory. Iron retorts, of Graham & Newman's make, and Elliman's Belgian clay, are ordered. Gratz's meters and Riley's gas-holder. About seven miles of mains laid, of 2 to 6 inches diameter. Illinois coals, at about $3 per ton, are mixed with Pittsburg coals, at about $7 per ton, for carbonizing. Quantity of gas made in 1859 over 7,000,000 cubic feet. A small indebtedness is provided for by a sinking fund of all profits over 8 per cent. per annum.

ON THE CHOICE OF A SITE FOR GAS-WORKS.

In our larger towns and cities the favorite locality for gas-works has generally been the side of a river or canal, which commonly furnishes an advantageous level, and at the same time gives the convenience of water carriage for the supply of the coal, the principal heavy article concerned in the manufacture of gas. Since the general establishment of railways, however, in nearly all the civilized countries of the world, a site contiguous to a railway is frequently found equally advantageous as far as economy of transit is concerned. The level of the railway being seldom so low as that of a river, which generally follows the very lowest levels of the country, a necessity has been created for laying some of the mains with a downward inclination, and this necessity has drawn enquiry towards the circumstances under which this may be done, and the limits within which districts lying below the site of the works can be advantageously supplied with gas.

It can scarcely be necessary to remark that a fluid like gas, having seldom half the specific gravity of common air, will always have a tendency to ascend in pipes. Two consequences follow immediately from the relative lightness of gas as compared with common air—namely, that except for the pressure with which the gas is sent into the mains, it would never descend in any pipe, and, in fact, would scarcely travel in a horizontal main; and, secondly, it follows that the highest lights in any district, and even in an individual house, always burn with more brilliancy than the lower ones, because at the greater elevation the gas has less resistance to overcome, so that it issues from the burners with more force and buoyancy.

In large towns where extensive gas-works are to be erected in suburban situations, it is very desirable to select the neighborhood of a railway, and to lay down a branch line of rails communicating with the retort-house. It is probable that similar connections between gas-works and railways will be made whenever, in future, new establishments are called for in the neighborhood of large towns. Already many towns of minor importance are being favored with an establishment for gas-making, owing to the proximity of a railway station where coals can be delivered alongside without the expense of carriage on ordinary roads. The railway companies would do well to encourage the establishment of gas-works even for very small towns, as in addition to the traffic in coal which it produces, they obtain the advantage of lighting their stations by gas. The most eligible situation for erecting gas-works close to a railway station is where the railway is on an embankment 12 or 14 feet high. A siding should here be constructed on which the coal-wagons turn out of the main line and discharge their contents through shoots or other well-known contrivances. The retort-house should be erected as close to the siding as convenient, so that the coal as delivered from the wagons will be quite ready for charging the retorts, and all expense, both of carting and wheeling the coal will be avoided. In the north of England, this juxtaposition of gas-works and railways is by no means uncommon, and many small towns are reaping the advantage of lighting by gas which otherwise might have long been without so great a blessing.

There are many other circumstances besides the facilities for distributing the gas and those connected with the conveyance of coal which must enter largely into consideration in the choice of a site. These circumstances frequently arise out of the relative value of property and the means of acquiring it, and become so purely of a local nature that no general observations would have any value as applied to them. A dry situation is of course highly desirable, as many of the pipes and connections are under-ground and would be much interfered with by water. During disastrous floods many gas-works have suffered very much from the ground being submerged in water, and in such cases the towns depending on them have had to submit to a state of total darkness for some nights and even weeks. Considerations of this nature, and also those connected with the solidity of the ground, and its proper capacity to sustain the buildings to be erected, will naturally occupy the attention of the Engineer in laying down a design for new gas-works.

It is very important to have a good map, not only of the site of the works but of the whole district to be supplied with gas; on this map the course of all the mains should be laid down, and the position of all governors, siphons and water receivers should be marked.

In addition to a mere surface plan, a network of levels should be taken over the whole district, and the grades or inclinations of all the mains marked on. The relative elevations of the whole district with reference to some fixed point near the gas-holder would be best shown by contour lines of equal hights drawn throughout the district. When the town is nearly all on the same level, contour lines may be laid down at intervals of a foot or 18 inches of vertical hight, but where the streets are very steep, intervals of 3 or four feet would be sufficient. The best rule for laying on the contours is, that they ought be so frequent as to show by mere inspection of the map the level of every part of the surface with reference to the fixed datum point.

There are no doubt abundant examples of the same kind of mistakes made by Gas and Water Companies as by Commissioners of Sewers for want of proper maps delineating their under ground works. Much economy and efficacy may be expected where the circumstances of each district as to levels and pressure can be at once ascertained, while on the other hand great losses are frequently occasioned by an ignorance of such particulars. It has been asserted by a writer on this subject that in a street of half a mile in length not less than twelve receivers have been discovered on taking up the main, while one, or at most two, would have been sufficient to drain the main. Blunders of this kind are evidently occasioned by the want of maps to refer to showing the work already executed, and which would have rendered unnecessary the repeated reconstruction of the same works.

SLATE PIPES.

The traveller who for the first time passes along the railway from Paris to Nantes is surprised, as he approaches Angers, to see the mountains of slate refuse which have been collected during past ages by the working of the slate quarries. On looking at the returns of the slate productions of Anjou, it is astonishing to observe the great progress of the manufacture of slates in recent years, which, by adding to the collection of *debris*, threatens shortly to choke up the capital of the Maine-et-Loire with mountains of broken slates. These black masses are not only ugly to look at, but they render the ground they occupy barren, which is a twofold inconvenience that shows the necessity of clearing them away as soon as possible.

It appears from official documents that, ten years ago, the eight slate quarries of Angers produced annually 120 millions of slates, split and dressed by 1600 workmen, and that latterly these quantities have almost doubled. We may form an opinion, therefore, of the large mass of *débris* which such a rate of production will accumulate if it continue to increase in the same proportion.

Manufacturers who visit these mines are greatly astonished to see the mass of broken slates remaining useless, and becoming an incumbrance, which the proprietors of the slate works do not attempt to remove. The object of the manufacturers at the present day is, indeed, to take advantage of everything, and to render even the most common refuse useful. But by what means can these broken slates become of use? What can be done with these schists, that have no cohesion, and which cannot even be employed for the repair of the roads? The difficulty seemed so great that it had never occurred to any one how to relieve the slate-works of Angers of their heaps of rubbish. Nevertheless, a workman of Nantes, who has already made several important discoveries—among others, the substitution of tinned lead pipes for common pipes, but which, owing to the cost of the materiel, has had only a limited use—has found the means of solving the double problem of using to advantage, for the manufacture of pipes for water or gas, the waste materials at Angers, and of clearing away from the slate-works their accumulated *débris*.

By means of a resinous melted substance poured upon the pounded broken slates, M. Charles Sébille obtains a plastic paste, which hardens on cooling, and then becomes strong, incorrodible, and is malleable only at a heat of 212° Fahrenheit.

This paste M. Sébille moulds into pipes. These pipes will resist a pressure of twelve atmospheres, and they are not affected by acids. The problem is thus solved beyond all expectation. M. Sébille is able to make pipes of any diameter and form, which are strong, though possessing a certain degree of elasticity, incorrodible, and sold at a low price, owing to the cheapness of the materials.

But the most important advantage of these pipes is the facility with which they can be lengthened, joined, and repaired as the schistose material adapts itself very readily to those operations. To make a joint there is no extraneous material required, the schistose paste being all-sufficient. For joining one pipe to another, M. Sébille has contrived a very ingenious instrument, which, on being applied red hot to the ends of the two pipes to be joined, softens the material, and unites the tubes together, producing a slight mark that shows where the joint was made. If by an extraordinary accident a crack should occur, it would not be requisite to send for a workman to repair it, for a red-hot iron applied to the crack would soften the edges, and close them together directly.

The service-pipe for gas or water may be joined to the mains with equal facility. An iron punch, of the same size as the pipe which is to be joined on to the main, is made red hot, and when pressed against the main the latter is quickly perforated. Into the hole thus made the pipe is inserted, and it is soldered to the main by means of the ridge of material at the edges caused by the heat, Metal service-pipes may be connected together in this manner as well as the pipes made of slate. The superiority of the slate pipes is thus established, since they resist a pressure of twelve atmospheres at least, are not oxydizable, and cost less than other pipes. A list of the prices of these pipes compared with others shows, in fact, that the slate pipes are from 30, 40, 50, and even 70 per cent. cheaper than any other kind of pipes that are manufactured (in France).

The schistose part is applicable with advantage to other purposes besides the making of gas and water-pipes. It is well suited for the lining of wooden cisterns and of small reservoirs of excavated earth; it may be moulded to form vessels for holding acids, or ornamental vases for holding flowers; amd it may be employed in most cases as a substitute for tiles and bitumen. These results prove that, in his own branch of manufacture at least, M. Sébille has solved the great manufacturing problem of cheap production by the use of new materials. —*Le Gaz and London Journal of Gas Lighting.*

ILLUMINATING POWER OF GAS.

The illuminating power of gas has generally been estimated by the shadow-test, or by Bunsen's photometer, in conjunction with an experimental meter for accurately measuring the consumption. The standard of comparison used by different experimenters has not always been the same, but a spermaceti candle, consuming 120 grains per hour, is now generally adopted.

Illuminating gas must vary in illuminating power with the proportion of carbon it contains; but much must depend upon the mode of combination in which the carbon is present, and also upon the manner in which the gas is burned. Thus, carbon, in the form of carbonic acid, is not only useless as a source of light, but actually prejudicial, a very small proportion of carbonic acid in coal-gas reducing the illuminating power to a great extent. Carbon, in the form of carbonic oxide, and as light carburetted hydrogen, is of little or no value as a source of light, these gases burning with a very faint flame. The heavy carburetted hydrogens, as olefiant gas, oil-gas, and the vapors of naphtha, many and indeed most of which are condensed by chlorine, bromine, and anhydrous sulphuric acid, are the ingredients of coal-gas to which it owes its illuminating power. Hence the value of gas as an illuminating agent has, since the time of Henry, been frequently estimated by the amount of condensation which it undergoes when mixed with a sufficient quantity of chlorine to absorb these higher compounds of carbon with hydrogen. Dr. Fyfe relies most implicitly upon the condensation test by chlorine, in connection with what he terms durability, for an accurate indication of the value of any gas, and he has shown in a great many instances these two points give a value which agrees very well with carefully conducted photometrical experiments. By durability is to be understood the time during which a certain volume of gas will continue to afford a standard amount of light. Bromine is employed by many to replace the chlorine in condensing the heavy carbohydrogens, and is in many respects more convenient for manipulation. In both cases the vapors of these substances left after condensation require to be removed from the gaseous mixture by a solution of potash before the amount of condensation is estimated. Anhydrous sulphuric acid, obtained by warming the Nordhausen acid, is preferred by others for effecting this condensation, a ball of porous coke attached to a platinum wire being saturated with the acid and thrust up into the mixture of gases. The substances condensed from the gas by all these agents appear to be the same; but from what has been stated with reference to the nature of these condensed hydrocarbons from different specimens of coal-gas, the illuminating power of the gas must depend far more upon their chemical constitution, and upon the amount of carbon they respectively contain, than upon the volumes which they occupy before condensation; and hence, although the test may be a good one when applied to gas obtained from the same species of coal under like conditions, and containing the same kinds of hydrocarbon, it is not applicable ar a means of setting a value upon gases obtained undedifferent circumstances from different species of coal.

CISTERNS IN VENICE, ITALY.—The manner of constructing cisterns for rain water in Venice, was recently described by M. Grimaud before the academy. He recommends it strongly to the attention of those whom it may concern. There are in Venice over 2,000 cisterns, which supply the city with good, pure water. Their construction may be briefly stated as follows: In the first place, a hole is dug about ten feet deep (the nature of the soil at Venice prevents a greater depth), and in the shape of an inverted truncated pyramid. The earth surrounding the sides is kept in its place by a strong wooden frame, which covers also the bottom of the cistern. Upon this is also applied a layer of fine, well-compacted clay, the thickness of which is in proportion to the size of the cistern, but never over a foot. It is considered very important to have no cavities whatever in this layer. On the middie part of the bottom is laid a circular stone, hollowed out in the centre. On this is erected a hollow cylinder, of the diameter of an ordinary well, built of dry bricks, well laid, those at the bottom being pierced with conical holes. This cylinder comes a little above the level of the soil. The space between the cylinder and the clay walls of the pyramid is filled with well washed sand up to the level of the clay walls. Before covering the whole with the pavement, there is laid at each angle a sort of stone box, the cover of which, also of stone, is pierced with holes. These boxes, called *cassetoni*, are joined with each other by a small canal of dry bricks, resting in the sand. When it rains the water enters by the *cassetoni*, penetrates into the sand through the jointures of the bricks of the canals, and finds its level in the interior of the cylindrical well, having passed through the little holes at the bottom. A cistern so constructed is said to give very pure water, and to retain it perfectly to the last drop.

SPRINGFIELD, ILL.—We find this company's report next in order. Use Ashcraft's iron retorts, Glover's dry meters, George Stacey's gas-holders, one of forty and one of sixty feet diameter, and eighteen feet deep; Illinois coal at 12 cents per 80 lb. Charge no rent for meters. Have five miles mains, two to six inches diameter.

SOMERSWORTH, N. H.—Called Great Falls Gas Light Company. Works built by Benedict and Warren, and are satisfactory; with Somersworth iron retorts and Down's meters. Use two parts Pictou with one part Cannel and one part Newcastle coal, at $7 35, $12 50, and $9 85 respectively. Charge no rent for meter.

CORRESPONDENCE.

THE AUTHORSHIP OF OBSERVATOR'S COMMUNICATIONS.

DALKEITH GAS-WORKS. SCOTLAND,
August 6, 1860.

To the Editor of the AMERICAN GAS-LIGHT JOURNAL.

Allow me to draw your attention to an error in your columns, in connection with the publication of "Observator's" communications on "*The comparative cost of gas and coal as calorific agents*," by their being dated from DALKEITH GAS-WORKS, SCOTLAND. The series of very valuable papers weich have come from the same pen reflect great honor upon their author, and entitle him to the best thanks of your readers; and though I should have been proud indeed to have been the author of those papers, yet justice to "Observator" requires me to correct this mistake, and allow the honor to be given to whom the honor is due. I trust that, ere this note can reach you, the mistake referred to will have been observed and corrected, and that the circumstance of its occurrence will not tend to deprive your readers of a continuance of these communications, as "Observator" seems to have neither idle hands nor unobservant eyes in gas matters.—I am, dear sir,

Your obedient servant,
JOHN YOUNG,
Engineer and Manager.

NOTE.—The authorship of the interesting and able articles referred to by our correspondent belongs to JAMES PATERSON, Esq., the accomplished Engineer of the Berwick-on-Tweed Gas-Works, and we hope for a continuance of his favors, which are esteemed very highly in this country as well as in Europe. We may as well take this opportunity to remind Mr. YOUNG that our readers are waiting for further evidences of his having "neither idle hands nor unobservant eyes" in matters in which he has already acquitted himself with credit.—ED.

THE PRAIRIE GAS-STONE.

To the Editor of the AMERICAN GAS-LIGHT JOURNAL:

24 WILLIAM STREET, NEW YORK,
Aug. 24, 1860.

High estimates have been entertained and published regarding a calcareous rock, known as the "Prairie Rock" or "Gas Stone" of Illinois. I have recently been called upon to examine this material with reference to its value for the manufacture of oils and for gas.

The rock is a bituminous limestone, in which there is a small percentage of silica. Under the microscope it appears very porous, or cellular, and the cells are filled, not with honey, but with semi-liquid bitumen, which gives out the peculiar odor of mineral naptha. By distillation the rock yielded at the rate of 16 gallons of crude oil per ton. The oils are like those distilled from the petroleum of Pennsylvania. Tested for gas, the produce was only at the rate of 1800 cubic feet of carburetted and bicarburetted per ton of 2000 lbs. The bitumen may be readily dissolved out of the "prairie stone" by the application of eupion or benzole, when nothing remains but the porous limestone, I was unable to discover any traces of nitre in the rock, or in its products. Nor do I believe that a material compound of nearly 90 per cent. of carbonate of lime and silica can ever compete with coals in the production of gas or oils. Similar lime and sandstones frequently occur in oil spring districts. This bituminous rock, however, is an almost certain indication of the presence of petroleum at or near its deposits. It is sufficiently open to allow the petroleum to drain through it, when unexposed to the atmosphere, by which it is oxidized and thickened. The bituminous rock itself bears evidence of the great extent of the oil region of the Western States.

Respectfully yours,
H. GESNER, *Chemist.*

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CHICAGO, August 3, 1860.

To the Editor of the AMERICAN GAS-LIGHT JOURNAL:

I received your communication some time since, and should have answered it sooner but for a severe attack of illness from which I am but just recovering. You request me to send you samples of the bituminous limestone, together with my analysis of of the same. I laid your letter before the proprietors of the mine; they have promised to furnish me with samples from different parts of their mine, which I will forward you by express.

The analysis I made was from a part of one of the blocks which some of the streets of Chicago is paved with, which after calcining, was perfectly soluble in nitric acid. After precipitating the lime from the solution, and evaporizing the lixivium, it produced me from twenty-three pennyweights nineteen grains of the calcined mineral, seventeen pennyweights thirteen grains of pure nitrate of potash, and three grains of magnesia. It is probable that different parts of the mine may give different results.

In the presence of one of the proprietors of the mine I tested the mineral, to ascertain if it contained any volatile oil. I introduced into an iron retort a given quantity of the mineral, to which I placed a dry receiver, leaving a small orifice to prevent explosion. On ignition of the retort, it very soon filled the receiver with a dense gas. I applied a flame to the orifice, which gave me a clear and brilliant flame, superior to the gas which this city is lighted with. There is not a doubt in my mind but that a ton of this mineral will, without washing, produce more gas than the same quantity of the best bituminous coal.

Yours respectfully,
WILLIAM CUMBERLAND.

—

CHICAGO, August 14, 1860.

To the Editor of the AMERICAN GAS-LIGHT JOURNAL:

Your favor to Mr. Cumberland was shown to me as a member of the Chicago Stone Coal Mining Company. We had put up a small box of our stone to send you as a specimen and fair sample some time since, but owing to the illness of Mr. Cumberland was not sent until now. Mr. Cumberland is a very correct man and a most excellent chemist, but somewhat advanced in years and in feeble health. His statements are correct, and the stone experimented upon was a fair average. We have twenty acres "*inexhaustible*," and covered with only about eight inches of soil. The stone can be burned for gas, drenched for saltpetre, leaving excellent lime. We shall soon experiment on a much larger scale, and will send you Dr. J. V. C. Blaney's certificate.

Yours respectfully,
WM. COLBY.

We have received the sample of gas-stone, for which Messrs. CUMBERLAND and COLBY will please accept our thanks.—ED.

EXTRACTION OF QUINIA BY COAL-OIL.

BY PROFESSOR DUSSAUCE.

To the Editor of the AMERICAN GAS-LIGHT JOURNAL:

The heavy hydrocarburets, (heavy oil) from the distillation of coal, could be used to extract quinia. The mixture of quinia and lime is dried as in the ordinary process, and then reduced to powder. It is then well mixed with the heavy oil in a copper vessel, sheeted with tin, and heated for one hour by steam at 212°. You leave it to settle and descend, the operation being three or four times repeated. All the solutions are mixed together in a large vessel having a cork in the bottom. While shaking them well, add water acidulated with sulphuric acid, which, united with the alkalies, will pass in solution in water. When left to settle, the oil swims at the top. Decant the water you boil with ammoniacal black, filter, and leave to crystallize. The oil could be used for some other operations. One pound of good bark will yield by this process 220 grains of pure sulphate of quinia.

H. DUSSAUCE.

THE BEAUTIES OF BURNING FLUID.

We continue the list of attractions offered by this volatile member of the household economy:

ANOTHER BURNING FLUID VICTIM.—It appears that between 6 and 7 o'clock last evening, a young woman, the wife of a carver named Breed, and the mother of two children, attempted to kindle a fire in the stove by pouring a quantity of burning fluid upon the wood. This done she lighted a match, and without securing the opening of the can, ignited the fluid in the stove. This was followed immediately by the explosion of the can, the contents of which were thrown upon her face and entire front of her person. Enveloped in flame, the woman rushed into the street and back into the house; but so terribly was she burned, that after lingering in great distress until 7 o'clock this morning, she died.

BURNING FLUID ACCIDENT IN MIDDLETOWN, CT.—About 10 o'clock last evening, Miss Laura Bliss was filling a lighted fluid lamp, when fire was communicated to the fluid in the can, an explosion followed, and the burning liquid was thrown over her person and about the house. Her screams aroused the family and neighbors, who wrapped her in blankets to extinguish the flames, and did everything possible to prevent serious results from following, but without avail—she died at six o'clock this morning. An alarm of fire was raised, and the fire department mustered at the house. In returning, one of the engines ran over Mr. Wm. Daniels, breaking his leg in two places, and also his jaw.

FEARFUL ACCIDENT—A WOMAN ALMOST BURNT TO DEATH IN CHARLESTOWN, MASS.—A sad and probably fatal accident on the premises located at No. 24 Pleasant street, Charlestown, last evening. From the facts which our reporter succeeded in gleaning, it appears that a woman named Biard, wife of Wm. Biard, a carver in the employ of Messrs. Robinson and Fairfield, being somewhat in a hurry, attempted to kindle a fire in the stove, and in order that the same might "burn up" quickly, she poured a quantity of fluid into the stove—not knowing that any fire existed—which immediately ignited, and enveloped the woman in flames, as well as bursting the can containing the fluid, which she held in her hand. The unfortunate creature losing all presence of mind, rushed up stairs, through the hall, and out into the street, where she continued running round for a few seconds, but finding that no one came to her rescue, she returned to the house, and again ran through the hall and out into the back yard, where she fell to the ground in an insensible condition. Soon the inmates of the house, as well as a large number of neighbors, collected around her, and succeeded in extinguishing the now expiring flames by the application of several pails of water. Medical attendance was immediately procured, and the sufferer removed into the house, when, indeed, a spectacle presented itself that was enough to make the most unflinching shudder. Her body was blackened from head to foot. Her hair was almost completely burned off. Not a vestige of clothing remained. Portions of her body were burnt to such an extent that large pieces of flesh seemed ready to fall from the bones. In short, her injuries are so severe that the medical gentleman, who has the case under his supervision, is of opinion a recovery need not be looked for. Mrs. Biard is mother of two interesting children. Her decease was looked for almost momentarily when our reporter left the scene of the sad occurrence at a late hour last night.

THE BURNING FLUID ABOMINATION IN CHICAGO, ILL.—The ill-fated domestic Catherine Lenain, referred to in our last issue as injured by an explosion of a can of burning fluid, has since deceased, and an inquest was held on Saturday by Coroner James, at No. 265 West Washington street. The jury with their verdict unite in a solemn protest against the use in families of these dangerous compounds, burning fluid, camphene, and kindred abominations.

FLUID LAMP EXPLOSION IN BOSTON, MASS.—On Friday night last a can of fluid took fire in the grocery store of Mr. Anderson, corner of Grand and Sixth streets, E. D., from some unknown cause. For a few minutes an extensive conflagration seemed highly probable but was fortunately prevented.

On Saturday night a fluid lamp exploded in the picture frame store of Mr. John Smith, No 100 Montrose avenue; the fire communicated to goods in the store, and destroyed property to the amount of $150. Insured in the Williamsburg City Insurance Co.

A woman named Catherine Mitchell, residing at 129 Hudson avenue, was dangerously burned on Saturday night by the explosion of a can of fluid with which she was replenishing a lamp.

CAMPHENE EXPLOSION IN ST. THOMAS, W. I.—Last Saturday evening our citizens were startled at hearing a noise like the report of a gun, proceeding from the bookstore of Mr Archibald McLachlin, and on inquiry it was found that Mr. McL. was engaged filling a small fluid lamp, when the gas escaping out of the can came in contact with the flame of the lamp, he having neglected to put the light out, but attempted to fill the lamp whilst the wick was burning, there being no other light in his office at the time. The force of the explosion may be judged when we state that it started the partition between his office and the store about twelve inches from its perpendicular, blowing out a square of glass in the door and another in the back window, scattering the fluid in all directions. A ball of heated air passed through the broken glass in the door, the whole length of the building, and broke one of the large panes of glass in the front window of the store. The burning fluid destroyed more or less of the many papers belonging to Mr. McLachlin as well as a number belonging to the township of Yarmouth. How he escaped with his life is a mystery, as the door and window were closed, and the wall being thrown out of its perpendicular, it was difficult to obtain egress; in his attempt to get out, he got his hands and face severely burnt. His clothing was likewise much burnt. Altogether his escape from death was most miraculous. Mr. McLachlin was speedily conveyed to the residence of Dr. Southwick, who exerted himself to alleviate the pain of the burns, and from which he is now slowly recovering. This is another warning to persons not to attempt filling lamps while near a flame, but to trim them at an earlier hour of the day.

ACCIDENT FROM BURNING FLUID IN PATERSON, N. J.—Last evening a Mrs. Dempsey, living in Washington street was lighting a fluid lamp with a lucifer match when she saw the top was not screwed on tightly, and that the flame was following the tubes into the lamp. Instead of hastily throwing it from her, she kept it, and attempted to put it out of the door. Ere she had got to the door the lamp burst, and her arm and hand were covered with the fiery liquid. Before the flame was extinguished she was shockingly burned, and has since been in great agony. This morning Mr. Parker, the jeweler, was sent for to cut off several rings from her fingers, and it was under great difficulty the service was rendered to the sufferer, as otherwise the physician said she would lose three fingers. As it is, her hand if saved will be horribly disfigured. The family had used camphene for a long time previously without accident.

The following statistics attempt to show how many persons have lost their lives, or have been injured, by the use of burning fluid. They were compiled from the papers by Mr. Merriam of Brooklyn, N. Y.

Years.	*Killed.*	*Injured.*
1850	2	10
1851	23	49
1852	15	31
1853	28	50
1854	55	70
1855	40	46
1856	65	93
1857	59	75
1858	54	93
1859	83	106

Mr. Merriam has not one fourth part of the number of victims in his list. Their name is Legion here and everywhere.

We think this list will do for to-day. Who will not be a willing slave to so attractive, even if fatal, a tyrant?

REPORTS OF GAS-LIGHT COMPANIES.

CITY OF LONDON GAS-LIGHT AND COKE CO.

The half yearly meeting of this company was held at the works in Down street, on Wednesday, Aug. 1. After the minutes and report were read, the secretary presented the following account:

Dr.

	£.	s	d.		
To cost of coals	21 470	12	0		
" Wages	8,869	19	8		
" Directors and Auditor's fees	489	6	0		
" Tradesmen's accounts (rather vague)	6,284	11	11		
" Repairs and depreciation of meters	910	16	9		
" Bad debts	373	15	10		
" Other charges	5,081	13	11		
" Profit and Loss	11,883	13	10		
				£55,364	9 11

Cr.

By Rental (sales of gas)	44 330	7	3		
" Coke	8 481	5	6		
" Breeze	322	7	0		
" Liquor	672	3	4		
" Tar	1,075	10	6		
" Old materials	476	14	4		
" Transfer fees	6	2	0	£55,364	9 11

Robert Alexander Gray esquire, the chairman, said, in moving the acceptance of the report and accounts, he should afford every gentleman present who wished for any explanation, the opportunity of obtaining it; that it appeared to him somewhat of an anomaly that while in all other parts of the metropolis, and throughout Great Britain, the price of gas is recognized at 4s. 6d. per 1000 feet, they should be condemned to 4s., whether it remunerated them or not: that he would be content with 4s. if it would give them a 10 per cent. dividend. Mr. Gray then recapitulated the legislative struggle through which the company had passed, and enlarged upon other local topics of no interest to our readers, referring particularly to their connection with the Great Central Gas-Light Company, which is located in the same district.

Mr. Box, whom we recognize as an old acquantance, and who evidently "condescends to things of low estate," then made some objection to the payment of the transfer fees, to which the chairman promptly replied that, as they were intended to go to the support of decayed servants of the Company, who, if they had something to look forward to in time of distress, would be more attached to the interests of the Company, he should contribute personally to that fund, and suggested it was hardly large enough to speak of at present. After some further routine business the meeting adjourned.

REPORT OF THE RATCLIFF GAS-LIGHT CO.

The ordinary half-yearly meeting of this Company was held on Thursday, Aug. 9, at the offices of the Company, New Crane Wharf, Wapping, J. G. Hammack, Esq., in the chair. After a feeling tribute to the virtue of their Secretary, Mr. John Gill, the following profit and loss account was read:

Dr.

To coal	£6,992	9	9	
" retorts	87	8	6	
" wages	2,434	13	11	
" Directors' Fees	275	0	0	
" salaries	628	14	0	
" bad debts	15	4	8	
" other charges	2,571	11	0	
" profit and loss	4,307	14	0	
				£17,312 15 10

Cr.

By sales of Gas	£13,998	17	9	
" Coke	2,799	11	0	
" Liquor	87	7	6	
" Sundries	426	19	7	
				$17,312 15 10

This Company also appears, by the remarks of the chairman, to have passed through a fiery ordeal in Parliament, with some of their opponents, from which they came out triumphant. A semi-annual dividend of per cent., and a bonus of 3s. per share were declared, and the meeting adjourned.

A FREE DRINKING FOUNTAIN AT THE CINCINNATI, O., GAS-WORKS.

Mr. John Jeffrey, Engineer of the Cincinnati, O., Gas-Works, has erected, at his own expense, in front of the works, a beautiful drinking fountain, in the shape of an arch, highly ornamented, and supplied with the means of refreshing man and beast,

The design and the device are pretty and appropriate—clouds yielding water and the sun giving light!

Over the arch are the words, "Praise the Lord, far all His blessings." Beneath that, the inscription, "For the Benefit of the Mechanics and Working-men of the Neighborhood, and the Public in general."

The motto, '*Post nubila Phœbus*,' though written about 1900 years ago by the Latin poet Ovid, is *pat* to the day. Who would have supposed that old Ovid knew anything about gas, and yet a free translation of this quotation from his poems might reasonably be rendered into '*After dark, the gas light shines*,' which no doubt it will every night after dark over this fountain in Cincinnati. Classic scholars may object to our translation of this Latin motto, but we believe Phœbus only typifies light, and our type of light is gas. After all, the device is appropriate; it is the crest ofthe Jeffrey coat of arms in heraldry.

On the front slab is the inscription:

Erected by
JOHN JEFFREY.

Site and Water Supplied by
CINCINNATI GAS-LIGHT AND COKE CO.,
1860.

The main features of the design of the Fountain are:

A Cast iron horse through resting on the curbstone of the side-walk, with a small jet of water playing in the centre.

B Cast-iron basin, 3 feet in diameter and 9 inches deep, into which the fountain water falls, 2 drinking cups being attached by chains.

D Mural cast-iron tablet, fastened against the face of the gas-holder brick tank wall, facing on Front street.

E Brick tank wall, facing on Front street.

F Indiana white marble steps or platform, on the side-walk of Front street.

H Copy of wall contained in circular form over top of fountain.

All the architectural ornaments, as well as the lettering of the inscriptions, are to be cast on the cast-iron arches and mural tablets. The alcove or niche plate, on which is represented in bas relievo, the sun and clouds, is of cast-iron, and is to be recessed about 18 inches, so as to receive half of the diameter of basin B, the other half diameter of the basin projects into the street.

A gas pipe will be tapped into the representation of the sun, with jets to represent the rays, which will be lighted at night. A water-pipe will be tapped into the lower part of the representation of the clouds, to supply the fountain water, which will be cool and clear, as it will be supplied from the model works of the Gas-Company.

The design and effect of the structure are as beautiful as the motives which suggested it are pure and philanthropic. The blessing which will crown the thirsty at this stream of life, will be reflected a thousand-fold upon him who "giveth a cup of cold water to the least of these."

FOREIGN NEWS.

BRITISH PATENTS.

232.—Thomas Walker of Birmingham, Engineer, for Improvements in means for cleansing sewerage and other waters.

246.—George Smith, of Glasgow, N. B., iron founder, for Improvements in monuments, fountains, lamps, letter-boxes and urinals, and such like ornamental and public erections in cast iron.

One part of the improvements consists in combining a fountain with a lamp pillar, having five branches or lamps in one erection or design; another in the application of cast iron letter-boxes to street lamps; and a third to the inclosing walls of urinals and similar erections.

The combination of the lamp posts and cast iron letter-boxes is probably a piracy of the patent of Albert Potts of Philadelphia.

252.—Thomas Culpin, of 24, Dowgate Hill, London, engineer, for improvements in water-closets and all sanitary vessels that require frequent flushing.

256.—Ferdinand Jossa, of Sunderland, chemist, for Improvements in the manufacture of sal-ammoniac from small and refuse coals, and from the gas generated in the manufacture of coke.

It is well known that among the products liberated and escaping with the smoke and gas generated by the combustion of coal, there is a large quantity of ammonia. This valuable material is at present lost, owing to the absence of simple and efficient means for its extraction from the products of such combustion. From its well-known affinity for combination in the form of salts with many acids, such as sulphuric, nitric, phosphoric acids, and others, it is found that it is simply necessary to arrange and construct flues or chimneys, so that facility for this combination will be presented, in order to obtain this valuable salt. For this purpose one or more methods may be employed, according to this invention.

The smoke and gases may be made to pass over pans containing suitable acids in solution, or the acid may be precipitated down a chimney in the form of rain, or trickled down between closely piled materials, which are exposed to the ascending column of smoke, and the acid precipitated therefrom becomes thoroughly exposed to the gases, and is collected in a vessel or receiver at the bottom, whence it can be again conveyed to the top, and so kept in circulation till the desired degree of saturation is effected.

As sulphuric acid is the cheapest and most manageable, its use, in a diluted form is preferred, and by considering the quantities of the various ingredients some estimate may be formed of the probable returns which may be expected to accrue. Coals contain from a half per cent. to four per cent. of ammonia, and taking the minimum rate of a half per cent. as the quantity which may always be relied upon to be obtained, the result of 100 coke ovens, burning 5 tons of coal each in 96 hours or 8 tons each per week, will give a yield of four tons of ammonia, which combining with about its weight of acid, produces 8 tons of sulphate of ammonia of a market value of about £18 per ton, the demand for which is immense. The produce may, however, be from 1 to 4 per cent., and supposing the price to be only £10 per ton, the profit must be very great.

Experiment has shown that the changes which occur, when animal or vegetable matters are subjected to the action of heat, vary in proportion to the range of temperature to which they are exposed. In circumstances where the material operated upon is in contact with a plentiful supply of heated air not deprived of its free oxygen by any act of combustion, the whole, or much the greater portion, of the carbon will be be burnt off as carbonic acid, and if any remains it will be mixed with the earthy matters of the organic substance forming the ashy coke. The hydrogen in the substance will escape as water at first, and if much is present, as carburetted hydrogen, and with the nitrogen (if the substance contain any) as ammonia and as carbonate of ammonia. But when the exposure to the heat is conducted in close vessels, such as distillation in retorts, another series of changes occur. At the outset, when the heat is considerable, aqueous vapor, organic vapor, organic acids, ammonia, and some combustible fluids soluble in water are given off. As the temperature augments, carbonic acid, carbonic oxide, water, and a number of oleaginous substances not soluble in water are formed. When the temperature rises up to and exceeds a red heat, the products are in great part or wholly gaseous. Destructive distillation may be considered as combustion with a very limited supply of oxygen, merely so much as is contained in the substance itself.

The results of any distillation of substance vary in so far as they contain or are different in nitrogen. Most of the products are common to both conditions; but when nitrogen is an element there are many circumstances formed peculiar to it. When the substances contain nitrogen or sulphur, as is the case with coal, &c., there are added to the foregoing ammonia, aniline, lencol, pecoline, lutridine, &c., and in all cases an ashy, carbonaceous mass remains in the retort or still, known as coke. Such are the changes produced at a temperature below a red heat.

At a temperature above this point, a series of gaseous products only are produced; and if there does not appear in the ordinary manufacture of gas a large amount of the above volatile liquids, it is because they are formed when the retort has, from any cause, been cooled down below a red heat, when they immediately appear, and are distilled over. It is the temperature at which coal is carbonized in close vessels which determines the nature of the products. If it be high, gaseous fluids will be produced; if it be low, volatile vapors (liquids) alone will be formed. This is now so well known that the utmost care is exerted to keep the retorts in sherry-red heat, 1400° Fahrenheit. The results of dry distillation are always very great and difficult of separation, and therefore ammonia can only be extracted as above mentioned, upon the principle based upon the affinity that it has for acids. For all practical purposes, a temperature of 650° to 700°, well maintained, yields the largest results as to the quantity of fluids obtained, although lower temperatures have been found to answer equally well where superheated steam thrown upon the materials has been used as an adjunct to the heat. Thus it will appear that it is during the earlier stages of combustion of the coal in a coke oven, and while the heat is but low, that the ammonia must be evolved. By a simple arrangement of flues and dampers, the smoke and gases are directed, for the first twelve hours after lighting, so as to pass into the chambers, chimney, or flue, where they can combine with the acid, as hereinbefore described. At the end of this period, when the whole of the ammonia has separated from the coal, the oven is placed in direct communication with the ordinary chimney, and the burning of them proceeds as usual. No part of the process, it will be seen, can in any way interfere with the efficient production of coke, as not the slighest check or obstacle is presented by the carrying out a process of collection of only one of the valuable products resulting from the combustion of coal as described.

The claim is for the exposure of an acid or acids in solution to the smoke and gases arising from the combustion of small and refuse coal, and in the manufacture of coke for the purpose as hereinbefore described.

268.—William Ingham, of Armley, in the County of York, tanner, and William Hincheliffe, of Armley, mechanic, for Improvements in apparatus for applying steam and other vapors, gases, or fluids in the production of motive power, and which may also be used for a pump or gas exhauster, or other similar purpose.

Within a solid cylinder is placed a solid cylinder or roller of less diameter, so that at one point the circumferences of the two cylinders shall touch. The steam, or other vapor, gas, or fluid, is let into the space between the two cylinders at one side of the point where they touch, and is allowed to escape at the other side of that point. The steam, or other vapor, gas, or fluid, drives a lever or piston, which is attached to the inner cylinder, and the power is generated by the revolution thus occasioned of the lever and the cylinder to which it is attached. The outer cylinder is fixed. The lever or piston is attached to the revolving cylinder in such a manner as to adapt its position in revolving to the varying width of the space between the cylinders, and thus to work steam-tight in that space. In cases in which the force of the vapor, gas, or fluid consists of weight or pressure rather than force of expansion, the invention may be varied by making the cylinders concentric, and arranging the admission and escape of the vapor, gas, or fluid at such points as will secure the greatest amount of power.

Another variation of the invention may be made by keeping the cylinder to which the lever or piston is attached stationary, and generating power by the revolution of the other cylinder.

The apparatus above described may also be driven by extraneous power and used for the purpose of creating a vacuum by the revolution of the lever or piston. It may thus be used as a pump or gas exhauster, or for any similar purpose in which a vacuum is required.

301.—Charles Theodule Launay and Auguste Marie Alexandre Dominé de Vernez, both of Paris, gentlemen, for an improved valve or cock for regulating or stopping the passage of gas, steam, water, or other fluids

302.—Charles Theodule Launay and Auguste Marie Alexandre Dominé de Vernez, both of Paris, gentlemen, for an improved apparatus for carburating hydrogen or other gas for illuminating purposes.

372.—James Wright, of 42, Bridge street, Blackfriars, London, engineer, for improvements in the construction of water-closets. Provisional protection only obtained,

PATENTS.

Inventors are informed that Patents are procured at the Rooms of the AMERICAN GAS-LIGHT JOURNAL, through F. C. TREADWELL, Jr., Esq., an experienced Patent Agent and Expert.

UNITED STATES.

29,456.—George Blanchard, of New York City, for an Improvement in Lamps:

I claim the combination of the valve, A, with the slide or tube, B, when the same is provided with the handle C, so that when taken hold of, the lamp drops down by its own weight; thus affording a lantern.

9,457.—John Blocher, of Williamsville, N. Y., for an Improvement in Water Wheels:

I claim the combination of a number of ratchet toothed wheels, arranged upon one shaft, a chain of buckets hung together by knife-edge joints formed of curved flanges at top and bottom of the buckets, and self-adjusting bearings of a guide roller shaft, substantially as and for the purposes set forth.

29,476.—J. R. Ender, of Trenton, La., for an Improved Fountain Washstand:

I claim combining with a washstand, as described, the water reservoir or bellows, E, and pipe, F, leading up to the basin, B; the whole being arranged and operated in the manner and for the purposes set forth.

29,479.—L. P. Garner, of Ashland Borough, Pa., for an Improved Apparatus for separating Slate from Coal:

I claim the employment of the screen within the screen, moveable, so that the inside screen may be moved or depressed, at the will of operator, thus increasing or diminishing the width of the spaces or openings between the bars, by reason of the peculiar shape of the bars, so that larger or smaller pieces of slate and other impurities may be separated from the coal, and other materials that may be passed over said screens.

29,481.—W. H. Gwynne, of New York City, for an Improvement in Apparatuses for Compressing Gas:

I claim the arrangement, for the purpose of compressing gas, of the drums, A A', supply-pipe, C, and discharge pipe, D, in combination with the cylinder, B, constructed and operating substantially as described.

[The object of this invention is to compress a quantity of illuminating gas in a drum or tank, so that a large quantity of gas can be carried from the place where it is manufactured to any distance, and that villages and towns or country seats can be supplied with gas from works situated at a great distance from the same.]

29,486.—A. G. Hamaker, of Peoria, Ill., for an Improvement in Gas burners:

I claim, first, Constructing the heating-chamber of the burner substantially as described, or in an equivalent manner, so that the different jets shall act upon the side of the burner, and unite in a single flame above its apex.

Second, Arranging over the jet orifices a deflecting plate, constructed substantially as described, so as to deflect and give the required direction to the jet of flame.

Third, The combination of a chambered burner with a central pipe, so arranged that its orifice or orifices of discharge will be above the jet orifices of the burner.

29,501.—Adolphus Lind, of San Francisco, Cal., for an Improvement in Water Wheels:

I claim providing the buckets, G, of a water wheel with a series of slots, K, in combination with dividing plates, L L, and slots and set screws, m m, for the purpose of regulating the size of the buckets.

29,511.—Hiram Nash, of Maysville, Ky., for an Improvement in Water Elevators:

I claim the loose drum, G, its toothed flange and pawl, K, and clutch plate, H, with the crankshaft, E, lever, F, wedge, J, and plate, I, for giving to the shaft an end play, in combination with band, b, and bucket, D—when the whole is arranged, constructed and operated substantially in the manner and for the purposes set forth.

[This invention consists in an improvement in hanging well buckets, whereby the bucket may be raised with a crank in the usual way and then lowered into the well again by its own gravity, without turning the crank, and by a fast or slow motion as may be desired. It further provides for drawing the water from the bucket automatically when the bucket is brought to its highest point of elevation.]

29,516.—John Parsons, of Cleveland, Ohio, for an Improvement in Bottom Plates for Drain Tiles:

I claim the two ridges, a a, on the bottom, A, substantially as described and for the purposes set forth; but—

I do not claim a bottom without the ridges, as my invention, neither do I confine myself to the bottoms and ridges being made of any particular material.

59,586.—Gottlieb Graessle, of Hamilton, Ohio, for an Improvement in Drain Tile Machines:

I claim first, The oil-boiled wooden molds, g g', constructed in the manner and for the purpose set forth.

Second, The combination and arrangement of the tempering tub B C D E, grated sides, F H, sliding frame, I I', valves, b, and molding tubes, G, constructed and operated in the manner and for the purposes set forth.

29,602.—Wm. Kenyon, of Steubenville, Ohio, for an Improved Gas Pipe-cutter:

I claim the combination of a chisel, D, of a gas pipe-cutter, with stationary and revolving chuck, F and A, a crankshaft, U, bevel gearing, I H, cog wheels, B C, and screwshaft, J, or their equivalents, for the purpose of revolving the chuck, F, and feeding the cutting tool, D, forward, by the automatic action of the parts of the implement, substantially as set forth.

29,654.—Bradford Stetson, of Uxbridge, Mass., assignor to himself and Elmer Townsend, of Boston, Mass., for an Improvement in Turbine Water Wheels:

I claim arranging the slotted plate, E, and its shaft, C, with the wheel, A, and its shaft, B, joining the two shafts, B and C, by the disks, m n, and screw, o, connected as described, and applying the plate, E, to the buckets, and the latter to the wheel heads, as specified.

RE-ISSUE.

E. H. Ashcroft, of Boston, Mass., for an Improvement in Apparatuses for Naphthalizing Gases. Patented June 5, 1860:

I claim the above specified arrangement and application of the float, scroll and disk, whereby they are rendered capable of easy and proper adjustment as explained.

Also, the combination of one or more propelling wings or the equivalent thereof, with the scroll and float, when applied within a cistern substantially in manner and for the purpose as described—such propelling devices being to facilitate or effect the rotation of the said float and scroll while buoyed within the liquid as described.

Also, the application and arrangement of the foraminous diaphragm with respect to the cistern and eduction pipe of the apparatus as described.

ADDITIONAL IMPROVEMENT.

Alburtus Geiger, of Dayton, Ohio, for an Improvement Lamps. Patented May 29, 1860;

I claim, first, Expanding the lower portion of the wick tube into a chamber or reservoir for the reception of the fluid as if flows through valve, E, thereby securing a more steady and regular supply to the wick, and also preventing the fluid from being vaporized too far from the burner.

Second, The combination of the chamber, H, with the wick tube, C, and heaters, A A—all being arranged substantially as and for the purposes specified.

CODE, HOPPER & GRATZ,

1500, 1502 and 1504 FILBERT-ST., PHILADELPHIA.

MANUFACTURERS OF

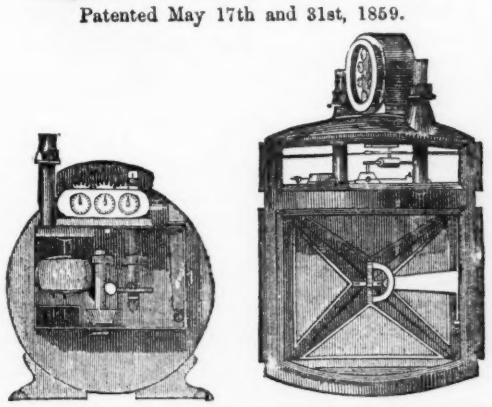
Pressure Registers, Pressure Indicators, Pressure Gauges, Photometers, Governors, Station Meters, Customer Meters, (Wet and Dry,) Experimental Meters, (Wet and Dry,) Show Meters, (Wet and Dry,) Meter Provers, Centre Seals, &c.

The high reputation which we have enjoyed for more than twenty-two years, and the fact that we have manufactured a greater number of Gas-Meters than all other manufacturers in this country combined, must present itself as a security to parties desirous of securing the most reliable instruments. Having completed a most extensive addition to our Factory, and added many important improvements to our machinery, we are enabled to fill orders entrusted to us with dispatch, and in all cases *Guarantee Entire Satisfaction.* Our Patent Rotary-Valve Dry Gas-Meter is now used by upwards of Two Hundred Gas Companies, giving general satisfaction; we therefore recommend it, believing it superior to any other Dry Gas-Meter manufactured. All Meters tested separately by a sworn Meter-Inspector, and sealed when desired.

HARRIS & BROTHER'S

Improved Dry Gas-Meter,

Patented May 17th and 31st, 1859.



HARRIS & BROTHER,

MANUFACTURERS OF EVERY DESCRIPTION OF

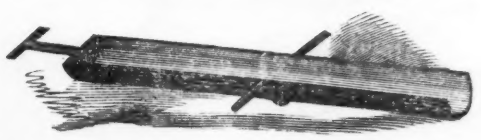
GAS-METERS AND GAS-APPARATUS,

No. 1117 Cherry St., Philadelphia.

McKINNY & KELLY,

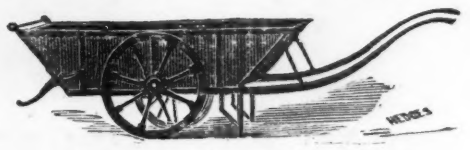
MANUFACTURERS OF

Coal-Scoops



AND

Coke-Barrows



FOR GAS-WORKS.

FURMAN-St., Near Fulton Ferry, Brooklyn, N. Y. Samples are on Exhibition at the Rooms of THE AMERICAN GAS-LIGHT JOURNAL.

WILLIAM ROY,

93 Beaver Street.

NEW YORK, IMPORTER OF THE CELEBRATED PERCETON FIRE-CLAY RETORTS the quality of which is superior to any other clay yet discovered. Analysis as under:

Silica	62.5	Magnesia	0.3
Alumina	35.0	Prox. of Manganese	0.2
Prox. of Iron	0.9	Phos. of Iron	0.5
Lime	0.6		

VITRIFIED FIRE-CLAY PIPES, from 2-inch to 36-inch, diameter, in lengths of two or three feet; are indestructible, and not affected by gases or acids.

Thomas Edington & Son's PATENT CAST-IRON PIPES are cast vertically to any weight required. They can also be coated with Dr. Smith's Solution, which prevents corrosion; adapted for gas and water. Made in lengths of nine and twelve feet, or turned and bored joints.

WROUGHT IRON TUBES and all materials for gas and water works, Fire-Bricks, Fire-Clay, Water Hydrants, Scotch and English Cannel Coal, &c. Kennedy's Water Meters for measuring the flow of water—indispensable to all water companies.

GENGEMBRE'S PATENT
NON-FREEZING AND NON-EVAPORATING
GAS-METER FLUID.

By the use of this Fluid, the WET GAS-MFTER of ordinary construction is rendered the most perfect and most reliable Gas-Measuring Instrument ever offered to Gas Companies. In winter the Meter will continue to work equally well, *However exposed it may be*, and in summer the level of the Fluid remaining constant, without refilling the measurement of the Gas, will be both uniform and constant.

The use of this Fluid is both easy an economical, and Gas Companies desirous of using it, will be licensed on liberal terms. For further particulars, and certificates of parties having used the same for over three years, and for city right, apply to

A. DOISY, Box 1180,

General Agent and Attorney for GENGEMBRE'S PATENT.

N. B.—No Sales of Territorial right, or Licenses for using my Patent will be valid, without being ratified by my Signature, as I have no Agent authorized to execute the same.

H. B. GENGEMBRE, PATENTEE,

Box 48, Alleghany City, Penn.

GEORGE STACEY, Cincinnati, O., Manufacturer of single and Telescopic Gasholders, Wrought-Iron Bridges, Girders, Joists and Stairways, Coke and Coal Wagons, Rakes, Screens, and other Gas-works tools, Slide and Cup Valves, Bolts, Nuts, Chisels, Ladles and other tools, Wrought-iron roofs, for Slate and Corrugated Iron, Gas Purifiers, Washers, Centre Seal Valves and other Gas apparatus, Boiler-plate Retort Lids. Refer to—

Cincinnati Gas Light & Coke Co.
Nashville Gas-Light Co.
Springfield Gas-Light Co.
Columbus Gas-Light Co.
Cleveland Gas-Light Co.
Covington and Newport Gas Light Co.
Memphis Gas-Light Co.
Indianapolis Gas-Light and Coke Co.
James H Caldwell, Esq., New Orleans.
John Jeffrey, Esq., Cincinnati.

S. S. ASHCRAFT, Cincinnati, O., Manufacturer of Gas and Water-Pipes, with Branches of every description; Retorts for Gas and Oil Works; Gasholder Stands, Columns, &c., Gas Purifiers, Condensers, and Gas Apparatus of all kinds; Foundry Work in general.

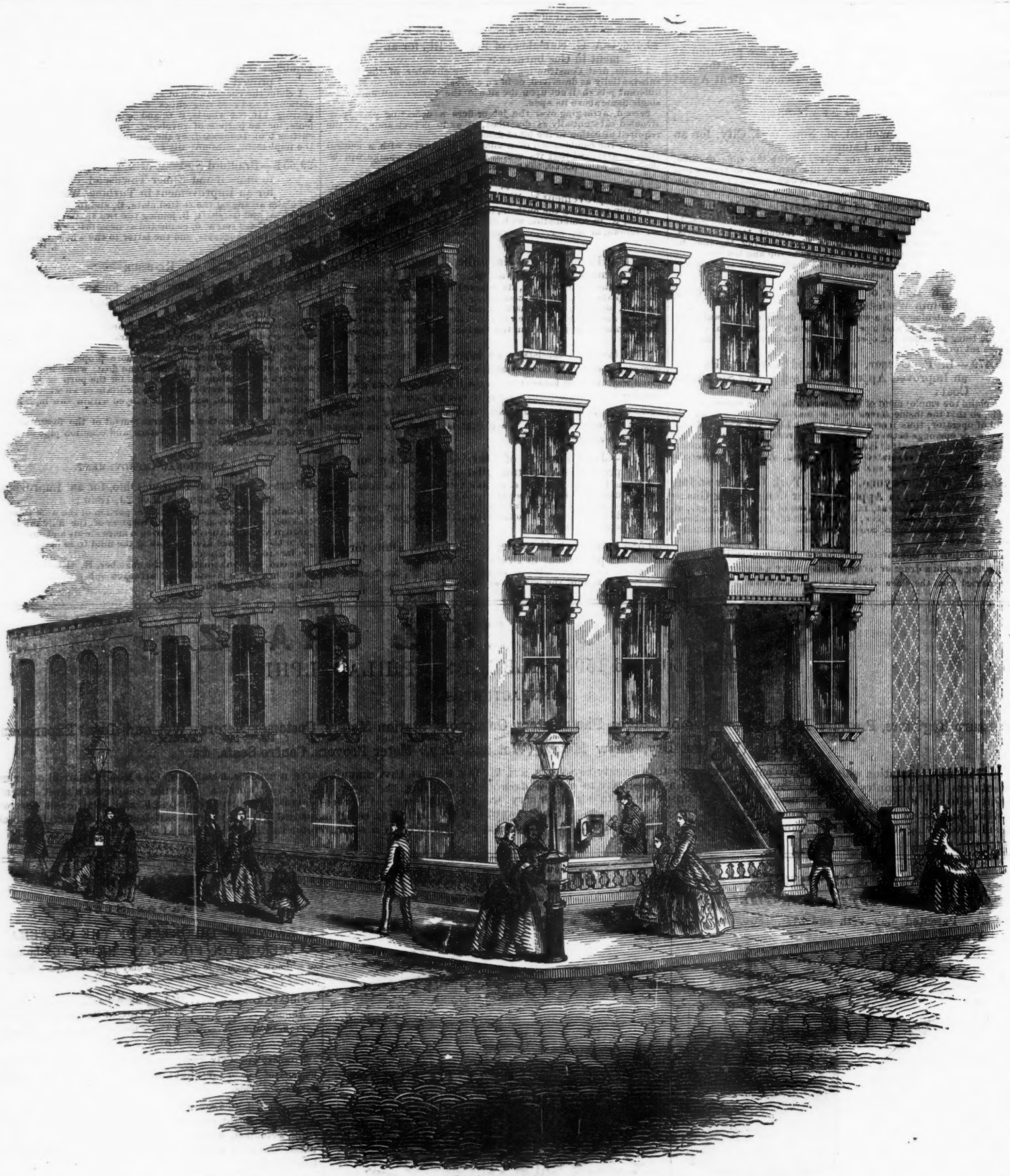
N. B.—A complete selection of Patterns on hand. Refer to any of the Gas Works in the Western and Southwestern States.

THEODORE SCOWDEN, Engineer, Louisville.
JOHN JEFFREY, Civil Engineer, Cincinnati.
JACOB HOUGHTON, Engineer, Detroit.

AMERICAN TUBE WORKS.—W. G. Smith & Co., Forty-sixth street, east of 10th Avenue, New York City. Manufacturers of

WELDED IRON PIPE,

for Steam or Gas, of all sizes, from 1-8th to 8 inches.



THE TWO GREAT PATENTS OF THE DAY.

1.—Improved Mode of Setting Gas-Meters in the Walls of Buildings.

2.—Cast-Iron Mail-Stations for Public Lamp-Posts.

Adopted by the UNITED STATES GOVERNMENT for the Principal Cities.

ALBERT POTTS, Philadelphia, Patentee.

By the FIRST IMPROVEMENT the Meters may be inspected at any time from without, by the agents of the Gas-Company having keys for that purpose. Thus burglars need no longer gain admittance to dwellings under pretense of examining the meters, while they, in fact, examine the fastenings. The meter-box, being neatly and securely imbedded in the front wall, the meter is protected against frost by means of a thick pad on the back of the door. It has been satisfactorily tested in long continued severe weather and found to be eminently successful.

The SECOND IMPROVEMENT speaks for itself. The cities of New-York and Philadelphia are already supplied with these boxes, and the convenience to the citizens and increase of revenue to the Post-Office Department are most marked. Always in sight, securely fastened to the most public objects, protected by light, day and night, they have become the most popular of all modern improvements and will be immediately adopted throughout the country.

Both of these improvements are to be seen at the Rooms of the AMERICAN GAS-LIGHT JOURNAL, New-York City. For further information address the Proprietor of this JOURNAL, who is authorised to contract for the use of both Improvements, or

ALBERT POTTS, Philadelphia.

BURTIS' PATENT COMPENSATING COUNTERBALANCE FOR GASOMETERS.—This Improvement consists in making the attachment to the Gas-Holder by counterweights in such a manner as to effectually prevent it from getting out of level so as to bind, and also to prevent any escape of Gas at Cup or Hydraulic seal, where the Holder is on the Telescopic plan. Holders that work out of level, are thus evenly balanced, and prevented from binding or lodging against Tank-wall and falling down, thereby being rendered unfit for service. Where Holders or sections of Holders cannot be used on account of the above difficulties, this arrangement will remove them, and place the Holder in good working order; moreover, with this attachment, deep tanks are not necessary.

BURTIS' COUNTERBALANCE has been in use for three years at the Gas-Works, Chicago, Ill. Its resistance to high winds and snow-drifts, is alone sufficient to recommend its general adoption. For Engravings, see AMERICAN GAS-LIGHT JOURNAL for June, 1860, page 221. Address

P. T. BURTIS,
Engineer Gas-Works, Chicago, Ill.

C. R. WOODWORTH,
Manufacturer of
PORTABLE GAS WORKS,
74 WALL STREET.
New York City.

BUTLER'S PATENT PORTABLE Gas-Works are designed for Dwellings, Churches, Factories and Country Villages, as well as for large consumers in cities. They make gas from CRUDE ROSIN, and are WARRANTED to make as rich an article, at less than ONE-HALF the cost of that made by the old method in Portable Gas-Works, and at one-third the average price of Coal-Gas as sold in cities. Great savings in expense of light GUARANTEED to large consumers.

Works of all sizes furnished to suit applicants. Mains, Service and Distributing Pipes put in. Also, a large assortment of Gas-Chandeliers, and other fixtures, always on hand, at the lowest prices.

The MANSION HOUSE, BROOKLYN, with 250 burners in constant use, make their own gas with my apparatus, with results as stated above. This, (with a small one at my store.) can be seen in operation by application at my office, where descriptive pamphlets, with the names of numbers who are using them, will be furnished.

JOHN BUTLER,
Nos. 112 Fulton & 15 Henry-st., Brooklyn, N.Y

FOR LIGHTING R. R. CARS, and Steamboats with Gas.—The whole process of filling the holders of a train requires but three minutes. Where the cars can stand on the track for thirty minutes, the gas is passed directly from the pump through the pipes and into the holders, thus doing away with the reservoir entirely; this may be done at either end of the road. This apparatus has been used on the New Jersey railroad nearly two years and for more than a year on the Camden and Amboy R. R., and the Philadelphia and Reading R. R. The Camden and Amboy R. R. Co. have the apparatus on all their cars, and on two of their Ferry Boats. The uniform flow of gas is secured by a Patent Regulator. This apparatus is also adapted to Steamboats making trips of not over three or four days in length, and to the head lights of Locomotives.

It can be seen in operation at the Rooms of the AMERICAN GAS-LIGHT JOURNAL. For Engravings, see AMERICAN GAS-LIGHT JOURNAL for June, 1860, page 245.

Apply to the
NEW YORK CAR & STEAMBOAT GAS CO.,
No. 117 Fulton street, N. Y.

GAS FOR THE COUNTRY.—C. WOOSTER, Manufacturer of Improved Portable Gas Machines, for Villages, Public Institutions, Churches, Hotels, Railroad Depots, Factories, Mills, Machine-Shops, Plantation Dwellings, &c. Office, 256 Canal street, near Broadway.

This Machine has been in successful operation for years, in many of the best residences and factories in the country, and for simplicity of construction, ease of management and economy of light produced, possess advantages over all other machines for the purpose now in use. It is adapted to the making of Gas from Crude Rosin or Rosin-Oil, producing a Gas of twice the illuminating power of Coal-Gas, at about one half the price usually charged for that gas.

Every Machine is sold under a strict guarantee to operate according to representation, and no payment required until the fact is demonstrated by actual use.

For further particulars, and descriptive pamphlet containing references to numerous parties now using the apparatus, address

C WOOSTER,
No. 256 Canal-st., near Broadway, N. Y.

For Engravings, see AMERICAN GAS-LIGHT JOURNAL, for June, 1860, page 245.

☞ Responsible Agents wanted, with whom liberal arrangements will be made.

APPLETON'S IMPROVED GAS-Works, for Factories, Hotels, Dwellings, and Towns. The most simple and economical works in use, furnishing a superior light to coal gas at a cost of one half a cent per burner per hour. It does not injure trees, or plate, and is not affected by cold. For Circular and Terms apply to

APPLETON & GRAHAM,
56 Washington street, Boston.

For Engravings, see AMERICAN GAS-LIGHT JOURNAL for April, page 213.

ROSIN GAS-WORKS, for Factories, Hotels, and Public Buildings. These works may be seen in operation at the Berkshire Woolen Mills, Great Barrington, Mass.; Manchester Mills, Manchester, Conn.; A. A. Van Alen & Co's. Factories, Stuyvesant Falls, N.Y., and many other places

JAMES O MORSE & CO.,
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JOHN COX & CO., No. 696 Broadway, cor. of Fourth street, New York. Importers of French and English Gas Fixtures of every description, Paris Clocks, Real Bronzes, &c. Manufacturers of Silver Ware.

MARSH'S PATENT ROSIN or Sun-Light Gas-Works, for Private Dwellings, Hotels, Factories, Railway stations, Sugar-Houses, Towns, &c. By the peculiar construction of the Retorts, the largest amount of decomposing surface is obtained in the smallest space. 2d. Gas is manufactured from crude rosin, without the least deposit of carbonaceous matter in the retorts or pipes: thus enabling them to be operated continuously, generating rapidly the best and cheapest illuminating gas obtained from this material. ALFRED MARSH & CO.,
241 Broadway, New York.

H. R. WORTHINGTON'S Patent Water-Meter.—This Meter combines accuracy, simplicity, and remarkable durability, with such ease and certainty of motion, as to offer no appreciable obstructions to the flow of water in the pipes to which it is connected, as it runs and registers upon three inches head, or when delivering the smallest stream. These qualities with its low cost, have caused its extensive adoption by corporations and individuals in many of our largest cities. Particular information can begiven at the office of the undersigned, where a Meter can be seen in operation.

For sale, at greatly reduced prices, WORTHINGTON'S STEAM PUMPS, extensively used by Gas-Light Companies. Also, a new and highly successful PUMP, driven by water-pressure, requiring no attention or repairs, and the most economical water-motor yet constructed.

Patent GATES, for Water and Steam-stops
HENRY R. WORTHINGTON,
28 Broadway, N. Y.

One of these Water-Meters can be seen in operation at the Rooms of the AMERICAN GAS-LIGHT JOURNAL.

PHILADELPHIA GAS FIXTURE Works.—Warner, Miskey & Merrill, Manufacturers, Store, No. 718 Chestnut street, Philadelphia. Warner, Peck & Co., No. 376 Broadway, New York; would respectfully inform the public that they continue to Manufacture all kinds of Gas Fixtures, Lamps, Girandoles, Bronzes, &c., and that their large and varied stock comprises the simplest as well as the most elaborate patterns, designed by their French artists. They also continue to keep at their store, 376 Broadway, a large and full assortment of all their manufactured Goods. Dealers and others are invited to call and examine.

Gas Fixtures and Fittings. RINGUET-LEPRINCE & L. MARCOTTE, Warehouse, 347 Fourth street.—Manufactory, 55 West Sixteenth street, New York.

RINGUET-LEPRINCE, 3 Rue de la Paix, Paris.

Painting, Paneling, Cabinet Work, Looking-Glass Plates, Mirror Frames, Silk, Worsted and Woolen Materials, Aubusson and Moquette Carpets, Gas Fixtures, Bronzes &c.

GAS FIXTURES TO BE SOLD at Wholesale Prices.—In consequence of alterations in his store, the Subscriber is obliged to dispose of his enire stock of Gas Fixtures Those wishing to purchase at very low prices wil do well to call. Gas Fixtures removed. Gas fitting executed in all its branches.

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LOCKE & CRAIGIE, Plumbers and Gas-Fitters, No. 12 East 20th street, New York.

LOCKE, CRAIGIE & CO., Gas-Fittings, Chandeliers, Brackets, Globes, &c., No. 927 Broadway, New York.

☞ Particular attention paid to country work.

JAMES HELME, Chandelier and Gas-Fitting Establishment, No. 58, East Thirteenth street, between Broadway and University Place, New York.

M'KENZIE & O'HARA, Plumbers and Gas-Fitters, No. 326 FOURTH STREET, CORNER OF MERCER ST., NEW YORK.

Water Closet Pans, Wine Basins, Wash Basins, Sinks, Fountains, Jets for public and private purposes, Stop-cocks, Filters, and all other Water apparatus.

ALSO, a complete assortment of Gas-fixtures, Pendants, Chandeliers, Brackets, &c &c.

TIFFANY & COMPANY, Jewelers and Importers of elegant artistic PARIS GAS CHANDELIERS, BRACKETS, PENDANTS, &c., in Bronze and Gilt.

No. 550 BROADWAY, NEW YORK.

FRD. C. KRAUSE, Manufacturer of Patent Porous Gas-Burners for COOKING, IRONING, HEATING, CHEMICAL APPARATUS, &c., No. 772 Eighth Avenue, corner of Fifty-Fourth street, New York.

Samples are on exhibition at the Rooms of the AMERICAN GAS-LIGHT JOURNAL.

FELLOWS, HOFFMAN & CO., (late Starr, Fellows & Co.,) Manufacturers of Gas Fixtures and Chandeliers, Solar, Camphene and Fluid Lamps, Girandoles, Hall Lanterns, &c. No 74 Beekman st., New York.

THOMAS NICHOLL, Gas and Steam Fitter and Plumber, Nos. 170 and 172 Centre street (next door to N.Y. Gas Co.'s office), New York. Pipes inserted in Churches, Factories and Dwellings; Chandeliers re-gilt.

Jobbing promptly attended to.

BRADBURY M. JOHNSON, GAS-Fitter and Plumber, No. 111 East Eighteenth street, New York:

A large and elegant assortment of CHANDELIERS, BRACKETS, &c. Gas-Pipe and Posts made for Gas Companies on favorable terms.

GEORGE H. KITCHEN & CO., Manufacturers of Fixtures for Gas Light purposes, Wood's Building, No. 561 Broadway, New York. Office of the Inspector of Gas Meters for the State of New York.

T. G. ARNOLD, Manufacturer of Gas Burners, Mercury Cups, Portable Sockets, Burner Pillars, &c., No. 447 Broome street (second door west of Broadway), New York. Imported Scotch Tips and Burner Plyers always on hand

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PATENT GAS-BURNERS.—Jas. McGLENSEY, No. 111 South Eighth street, PHILADELPHIA, Manufacturer of Gas-Burners, Meters, &c., respectfully calls the attention of Book-Binders, Chemists, Druggists, Copperplate Printers, Brush-Makers, Case and Cabinet-Makers, Hotels and Restaurants, to his Patent Gas-Stove Heating Apparatus, as being particularlarly adapted to their wants—preventing all soiling and injury to the vessels or substances heated, is entirely free from smoke or smell, and highly economical. He refers to the following persons, who have the Apparatus in use:

BURLOCK & CRESHAW, Nos. 103 & 105 N. 6th-st.
T. S. WIEGAND, Chemist, 15th & Race-st.
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HARPER & O'CONNELL, Manufacturers of Gas Shades and Globes of every description. FRENCH COLORED GAS SHADES AND SMOKE BELLS Nos. 63 and 65 Elizabeth street, corner Hester, New York.

PLASTIC CARBON FILTERS.—The most simple, effective and reliable means of purifying water without trouble or loss of time; may be used for all domestic and manufacturing purposes, and will be furnished in various sizes, by A. G SCHELLER,
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CAST-IRON PIPES.—EARL'S IRON WORKS, NEWARK, N. J., 91, 93, 95, 97 and 99 Chestnut street. Branch Office, 21 Centre street, New York.

The subscriber continues to manufacture Superior Cast-Iron Gas and Water Pipes, Branches, Bends, Angles, Bevel Hubs, Reduces, Sleeves, Drip Syphons, Plugs, Caps, Retorts, Bench Castings, and Castings in general, Particular attention paid to all Castings connected with Gas Works. E B. EARL.

GAS-METER MANUFACTORY.
JOHN J. GRIFFIN & CO.,
No. 7 Beekman-St., & 76 West 37th St.,
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Manufacturers of Wet and Dry Gas-Meters, Station-Meters, Show-Meters, Meter-Provers, Pressure-Indicators, Pressure-Registers, Pressure-Guages, Mercury-Cups, Centre-Seals, &c., &c.

☞ ALL METERS SEALED BY THE STATE INSPECTOR.

TO GAS-LIGHT AND WATER Companies:

SARONY, MAJOR & KNAPP, practical Lithographers, Engravers and Printers, No. 449 Broadway, design and execute CERTIFICATES OF STOCK for Gas and Water Companies; also, CHECK AND NOTE BOOKS, with Vignettes of Meters, Gas-Holders, Reservoirs, &c., and all other special and commercial work, at the lowest prices.

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Manufacturers' Agent for the sale of all descriptions of APPARATUS, PHILOSOPHICAL INSTRUMENTS and Raw Material used in and about Gas and Coal-Oil Works.

Also, Dealer in KEROSENE and other approved brands of COAL-OILS, Candles, etc., etc.

Estimates procured for VILLAGE and PORTABLE GAS-WORKS of all kinds, COMPRESSED GAS APPARATUS, &c., &c.

TO CANDLE AND SOAP Makers.—Processes with drawings to manufacture every kind of candles and soaps by different processes: Candles by distillation, saponification, French candles, common candles, hard and soft soaps, palm soaps; processes to bleach palm oil and make candles out of it; purification of tallow; essays on greases and soaps. Address, Professor H. DUSSAUCE, Chemist, New Lebanon, N. Y.

DIMMOCK, DWIGHT & CO., Engineers and Contractors for the erection of Coal Gas-Works. Offices 135 and 137 William street, New York city; and No. 2 Elm street, Springfield, Mass.

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POOLE & HUNT, Baltimore, Md., are prepared to execute orders for
GAS-HOLDERS,
IRON-ROOF FRAMING,
And all other Descriptions of
Iron Work for Gas-Works, Water-Pipes, and Heavy Castings and Machinery Generally.

DANIEL THOMPSON, Machinist and manufacturer of Stop Cocks, Fire Plugs, &c., for Water-Works, STOP COCKS, VALVES, DRIP PUMPS, &c., for Gas-Works, No. 133, Elfreth Alley, Philadelphia.

BROOKLYN, N. Y., WATER-Works. Notice to Water Takers.—Nassau Water Department—Water takers will take notice that the penalty for the violation of the following rule of the Water Department will be rigidly enforced: Sec. 35. Fine for using street washers, or water for washing windows, door steps, sidewalks or streets, after 8 o'clock in the morning, from May to November, and after 9 o'clock in the morning from November to May. Five dollars for each offence. Brooklyn, July 5th, 1860.

GAMALIEL KING, Pres.
D. L. NORTHUP, Sec'y.

CLEGG'S TREATISE ON Coal-Gas Manufacture, third edition, with full instructions upon every detail incident to Gas-making, illustrated by Engravings. A large supply has arrived. No Gas Company or Engineer should be without it.

For sale at Rooms of the AMERICAN GAS-LIGHT JOURNAL, New York.

ANALYTICAL & Manufacturing Chemistry.—Gesner's Chemical and Engineering Rooms, 24 William-street, New York Rooms No. 28 and 29. Analysis made of all mineral and commercial articles Coal oils tested, coal oil works erected, and contracts made. The best processes for purifying and deodorizing; coal and petroleum oils furnished, with skilful workmen and superintendents. Mines surveyed and coal tested.

The Kerosene patents, from which the coal of business in the United States originated, were granted to Dr. Gesner, Chemist and Geologist.

LABORATORY OF CHEMISTRY.—Consultations on Chemistry applied to arts and manufactures, agriculture, metallurgy, analysis of ores, mineral waters, soils, &c. Advices on chemical fabrications. Address, Professor H. DUSSAUCE, Chemist, (from the Conservatoire Imperial of Arts and Manufactures, Paris) New Lebanon, N. Y.

FREEZING OF GAS-PIPES.—Walton's Patent Anti-Freezing Apparatus illustrated by engravings, in the AMERICAN GAS-LIGHT JOURNAL, of Jan., 1860, page 141, is the most simple, durable and efficient of any known process.

According to Professor Faraday, the watery vapor contained in illuminating gas amounts to 0·0093 parts where the gas is at a temperature of 40°, or in other words, that there are 1, 7-10 *gills water in every* 1,000 *cubic feet of gas* at that temperature. It is the deposit of this water in the form of frost that closes the exposed pipes.

Walton's plan is, in a few words, to supply this water with a sufficient quantity of alcohol (98–100ths), the vapor of which will enable it to pass through the most exposed pipes, unaffected by frost. Experiments of three years prove that one gill of such alcohol will protect 1,000 feet of gas at any temperature. Private houses, Hotels and Gas-works, can be thus guarantied from frost by the use of Walton's Anti-Freezer, which consists of but two or three small castings, at the most trifling cost. It can be applied at Gas-works without altering any of the pipes; and the expense of labor and the alcohol will not exceed two cents per 1,000 feet of gas.

It can be seen in operation at the rooms of the AMERICAN GAS-LIGHT JOURNAL, where orders will be executed at once.

Read the Following Testimonials:

GAS WORKS, CINCINNATI, O., 24th MAY, 1858.
MR. JOHN WALTON, Louisville, Ky.:

DEAR SIR,—At an earlier date, I intended to have written you the result of my experience during last winter, in regard to your patented apparatus to prevent the freezing of gas in pipes. I am quite convinced that both in theory and practice your apparatus is correct, and in no case will it fail to prevent the freezing in pipes of our illuminating carburretted hydrogen gas, provided attention is paid to renew the alcohol often enough in proportion to the amount of gas passing through the anti-freezing apparatus.

Yours truly, JOHN JEFFREY.
OFFICE LOUISVILLE, KY., GAS CO., March 30th, 1860.

In the winter of 1856, this Gas Company first applied John Walton's patent method for the prevention of Frost in Service Pipes,—to this date we have used it with perfect success. *This Company have Purchased the Right to this Patent for Louisville, Kentucky.*

The application of a vessel, containing a small quantity of alcohol, placed between the gas main and an open area connected with a building, through which the service pipe was laid, has always prevented the freezing or stoppage of the service pipe, although the temperature may have ranged from the freezing point to several degrees below zero.

As the alcohol absorbs from the gas any vapor of the water that may be passing off with it, after passing the vessel containing alcohol, there remains in the gas nothing that can freeze or close the pipe. *This simple application, we have proved to be an effectual safeguard against the closing of gas pipes with frost.*

ROBERT G. COURTENAY, President.

JOHN RUSSELL & CO.,

PATENT TUBE MAKERS,

THE OLD TUBE WORKS, WEDNESBURY, AND THE ALMA WORKS, WALSAL, STAFFORDSHIRE

69 UPPER THAMES-ST., & 5 CHARLES-ST., SOHO, LONDON;

AND 35 GRANBY-ROW, MANCHESTER, ENGLAND.

The original Manufacturers of WROUGHT-IRON GAS TUBES, and the Inventors of the Lapwelded Tubes for Locomotive and Marine Boilers All kinds of TUBES and FITTINGS, whether for Gas, Steam, or Water. Galvanized and Composition Tubes. Chandeliers, and every kind of Brass-work for Gas and Steam.

STOCKS, DIES, AND TAPS OF ALL SIZES. CAST IRON PIPE AND GAS-METERS.

ALL GOODS WARRANTED.

PHILLIPS & ALLEN,

Pensylvania av., above 22d st., Philadelphia.

GASOMETER RIVETS.

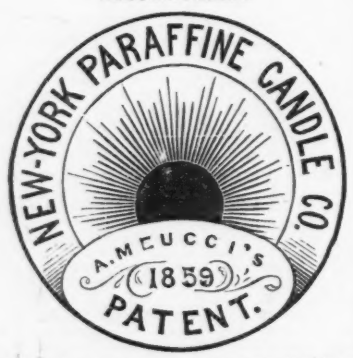
Every kind of Rivets used in Gasometers.

CANDLES FROM COAL.—A New Invention, Manufactured by the

NEW YORK PARAFFINE CANDLE COMPANY,

UNDER

MEUCCI'S PATENT.



These Candles being made from one of the products of the distillation of Coal, and having the same chemical constituents as gas, being, in fact,

GAS SOLIDIFIED,

are eminently adapted for giving light. They took the highest premium at the late Fair of the American Institute, held October, 1859, as may be seen from the following extract from the report of the Committee:—

"Our tests with the Photometer showed that the Paraffine Candles above referred to, as compared with the best Sperm. had greater illuminating power, gave a softer and pleasanter light to read by, and burned full ten per cent. longer than the standard Sperm Candle, and we recommend it as deserving the highest premium of the Institute.

"ISAIAH DECK, M. D.,
"Analytical and Consulting Chemist.
"JOSEPH YATES,
"Civil Engineer."

The Candles manufactured by this Company are warranted to stand all climates, will not run or gutter, and require no snuffing, and, unlike some other so-called Paraffine Candles,

DO NOT SMOKE IN BURNING OR BECOME YELLOW WITH AGE, AND ARE WITHOUT ODOR.

CAUTION.—As an Imitation Candle is already offered in the market, purchasers should bear in mind that every box of Candles sold by this Company is stamped with its adopted trade mark, which is a circle, enclosing the words, "NEW YORK PARAFFINE CANDLE CO., MEUCCI'S PATENT, 1859," with our trade mark as above, to imitate which is felony by law.

WM. E. RIDER, 16 Beekman-st., N. Y.,
Agent for the Company.

STANDARD Photometric Candles.—Owing to a number of Applications made to me for information concerning the supply of the "Standard Sperm Candles," used in Photometrics, I have obtained a supply, from which I can furnish those who require them with full directions for use. T. W. PARMELE,
No. 4 Irving Place, New York.

D. C. GREEN'S PARAFFINE 42½ Gall. Lubricating Oil.—228 Pearl street, New York Benzole, Crude Coal Oils, Naptha, Burning Coal Oils, Paraffine, Paraffine Candles.

DEPOT AND WAREROOM of the New-York Columbian Oil Company, 58 Courtland street, New York.
G. M. WHEATON, Agent

COPE'S PATENTED COAL OIL Pump.—Reliable and effective. Manufactured by S. CUMMINGS & SON,
No. 162 Front-st., Cincinnati, O.

EMPIRE STATE COAL OIL CO.—Manufacturers of Refined, Bleached, and Deodorized Coal Oil, Factory on Smith street, Brooklyn, L. I.; Store, 240 Pearl street, corner Burling Slip, New York.

KEROSENE OILS.—THE NEW-YORK KEROSENE OIL CO., reorganized with a cash capital adequate to the transaction of its business on the most extensive and liberal scale, is now prepared to furnish Oils of the best quality. The entire works belonging to the late Kerosene Oil Company, together with its legal privileges, and the stock of superior Coals imported by it, have been purchased by this company on terms which enable it to offer unusual inducements to dealers and consumers.

This Company will embrace in its operations the manufacture of the various grades of Oils for illuminating and other purposes, from Coals and such other substances as science may bring into practical use, and the prices for the different grades will be so arranged as to meet the necessities and command the confidence of the trade.

It will be the policy of this Company to accumulate at an early day a large surplus of finished oils, in order that regular customers may safely rely on a certain supply during the winter months.

The competent and experienced employees of the former Company, have been retained under the new organization, which will thus be able to offer to dealers the same superior article which has rendered the Kerosene Oil the admitted standard of excellence in this and other markets.

A careful Photometrical examination of Kerosene Oil by one of the most prominent chemists in the United States, after the most careful experiments and thorough investigation, give the following results:

Material.	Lamp.	Intensity of Light.	Quantity of Light from an equal measure of Oil	Cost of an equal amount of Light.
Kerosene	Kerosene....	13·689	2·435	$4 10
Camphene.. .	Camphene...	5·625	1·299	4 85
Sylvic Oil....	Rosin Oil....	1·190	826	6 06
Rapeseed Oil.	Mechanical..	5·929	1·660	9 00
Whale Oil...	Solar.....	1·892	833	12 00
Lard Oil	Solar..	1·646	706	17 70
Sperm Oil....	Solar.....	2·025	850	25 47
Burning Fluid	Large Wick.	553	300	29 00

Material.	Intensity of Light.	Consumption ℔ hour.	Retail price of Materials.	Cost of a Light of the same Intensity per hour.
Kerosene Oil..	13 689	1200 grs	$1 ℔ ga.	2 44-100 of 1 cent.
Coal Gas.....	4 97(	5 C. ft	3 ℔ M	4 12-100 of 1 cent.

The New-York Kerosene Oil Company are the exclusive proprietors of the Patent Rights for the manufacture of Kerosene; also, owners of the trade mark "Kerosene," which has been sustained by the courts in suit of the Company vs. Smithers & Co., and injunction granted.

In addition to the regular standard Kerosene Illuminating Oil, the Company have entered into an arrangement with Mr. James Young, of Glasgow, Scotland, for authority to sell exclusively in this market, "Young's Paraffine Illuminating Oil," and "Young's Patent Mineral Oil," for machinery and lubricating purposes generally.

Being the exclusive proprietor of the trademark "Kerosene," and having also acquired the legal right from Mr. J. Young to maintain and use the several trade marks known as "Young's Paraffine Illuminating Oil," and "Young's Patent Mineral Oil," we hereby give notice that any and all infringement of the following described Trade Marks will be promptly and vigorously prosecuted, viz: "Kerosene Illuminating Oil," "Kerosene Machinery Oil," "Kerosene Binnacle Oil," "Paraffine Illuminating Oil," "Young's Patent Mineral Oil."

The latter article, which we have the license to sell from the original patentee, has attained the highest reputation among the most intelligent cotton spinners of England, and it can be safely recommended for its admirable qualities in that department of manufacture.

The entire management of the sales of the Kerosene and the other Oils has been confided by the Company to us as the General Agents, and in addition to the control of the Oil department, we will continue to furnish our usual supply of Lamps, Chimneys, Wicks, &c., the well known manufacture of the New England and Boston and Sandwich Glass Co.'s, for which you will please address THOMAS T. MOORE & Co., as heretofore.

COZENS & CO., Sole Depot 89 Water-st., N. Y.

STREET GAS-LANTERNS.

Cities and Gas Companies furnished at reasonable rates with Lanterns, Iron Frames, Grazed Complete or Separate. Also, Fancy Lanterns, for Hotels, Restaurants, Theatres, Telegraph Offices, Churches, and other Public Buildings. Having been in the business for many years I fully understand the manufacture of Gas Lanterns, and with the aid of machinery can make the parts cheaper than any other manufacturer. Orders from a distance solicited, and executed promply.

A. C. PARRY,

31 Race Street, Cincinnati, Ohio.

ENAMEL DIALS FOR GAS AND WATER METERS.
BOTTOMLEY & HINES, MANUFACTURERS, West Philadelphia, Pa.
The best, therefore the cheapest for Gas and Water Meters and Engineers' Indicators.

These Dials are particularly adapted to all purposes where gas, gas-vapors, or acids, are present. Also, Watch and Clock Dials of every description, from any size up to 14 inches diameter.

The undersigned embrace this opportunity of returning their thanks to the gas-meter manufacturers throughout the United States, for the very liberal patronage they have received for the past ten years, during which they have been established in Philadelphia, which has placed us ahead of all competition. Our sales for the past year have been far greater than we could have anticipated, with the prospects of a steady increase. Our constant aim has been, and will be, to adopt all improved processes of manufacture, combining improvementin quality with reduction in price. All Dials made by us are warranted to be as represented, and of the best materials and workmanship, which will recommend them to all parties wishing the very best. Circulars sent free by mail, or on application

We are the appointed agents for HUNTER, SHEARMAN & CO.'S make of BRASS PINION-WIRE for Gas-meters, which we believe is equal to the best.

J. L. McREA, Dealer in Coal Oils and Lamps, Binnacle and Signal Light Oils, 139 Water street, New York.

DANIEL WADSWORTH & CO., Coal Oil Manufacturers, Wholesale Dealers in Oils and Naval Stores, and Commission Merchants.

DANIEL WADSWORTH,
DECIUS WADSWORTH,
207 Pearl street, New York.

ORION COAL OIL WORKS—Office, 116 Maiden Lane, New York.—Illuminating, Crude and Lubricating Oils, Paraffine, Naptha and Paraffine Candles; constantly on hand an assortment of Coal Oil Lamps.

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ROBERT A. CHEESEBROUGH,
Depot 204 Pearl st., cor. Maiden Lane, N. Y.
Works on Red Hook, Brooklyn, manufacturer of Illuminating, Lubricating, Binnacle and Head Light Coal Oils. Also, Agent for the Aladdin Coal Oil Works, Pittsburg.

CARBON OIL CO.—191 Pearl St., near Maiden Lane, N. Y.—Carbon Oil is the product of pure Petroleum, (from the Oil Wells of Pennsylvania,) which makes an illuminating Oil of greater purity than any other Mineral Substance known. Is not explosive, and is for sale, with a general assortment of Lamps, Burners, Chimneys, &c.

DIRECTIONS.—Trim the wick even with the tube, (clipping off the corners slightly). After lighting and putting on the chimney, allow the flame to burn low for a minute, to prevent breaking the chimney. While burning, the wick must always be kept below the top of the cone.

CRUDE COAL OIL For Refiners.—The North American and Lucesco Coal Oil Companies, of Pennsylvania.

J. P. HARLEY, 16 Wall-st.,
WM. C. UHLHORN, 9 South William-st.,
Agents, New York.

TO COAL OIL REFINERS.—Having made arrangements with the Proprietor of the principal wells yielding Petroleum, or Seneca Oil, in the State of Pennsylvania, we are constantly receiving supplies, and are prepared to offer this article on the most favorable terms, and in quantities to suit purchasers.

SCHIEFFELIN BROTHERS & CO.,
170 William street.

COAL OIL.—10,000 Gallons Celebrated Kerosene Coal Oil, 5,000 Gallons Boston Coal Oil, and other brands, at $1.25 per gallon. STANFORD BROTHERS,
Pacific Oil and Camphene Works, cor. of Front and California streets, San Francisco, Cal.

HENDRICKSON & SHATTUCK, Manufacturers of the Excelsior Lubricating Oil, Philogene and Paraffine Oils; also, Dealers in Sperm, Lard, Whale, Elephant, Tanners', Tallow, Coal, Neatsfoots, Paint and other Oils, Office, No. 22 Cedar street, between William and Pearl streets D. W. HENDRICKSON,
ALBERT G. SHATTUCK, New York.

Rosin Oil and Rosin.—For sale of our own manufacture a superior article of ROSIN OIL, for Gas purposes. Also Refined Oil. For shipment in secure iron-bound barrels, or by any single barrel.

Address MARYLAND GAS COMPANY, No. 6 Bank of Baltimore Building, Baltimore, Md.

P. S. This Company is also prepared to construct their superior Patented GAS WORKS of any capacity, from that required for a private dwelling, hotel, church, college or factory, to such as will supply cities and towns, complete in all their parts for the manufacture of GAS, from either Rosin Oil, Coal, or Rosin.

WHEELER & HOYT.—Distillers of Camphene Alcohol, and Manufacturers of the best quality of burning Fluid; also, Dealers in Oils and Naval Stores of every description. Office, 106 Pearl street, near Maiden Lane, New York. F. A. WHEELER,
H. S. HOYT.

JAMES A. WEBB, Manufacturer of Alcohol, Camphene, and Burning Fluid, No. 165 Pearl street, New York.

AARON SEELEY, Manufacturer of Burning Fluid, Camphene, and Alcohol, No. 32 Burling Slip, New York.

J. H. BRUNDAGE & CO., Manufacturers of Burning Fluid and Camphene, No. 38 Burling Slip, New York.

P. CONWAY, Manufacturer of Oil Cans, square and round, of every size, Druggists' and Shipping Cans made tight, and delivered to any part of the city, by sending to No. 138 MAIDEN LANE, N. Y.

A. & G. BRANDON, Manufacturers of Street and Fancy

LAMPS,

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